Asimov's Science Fiction

JUNE 2002

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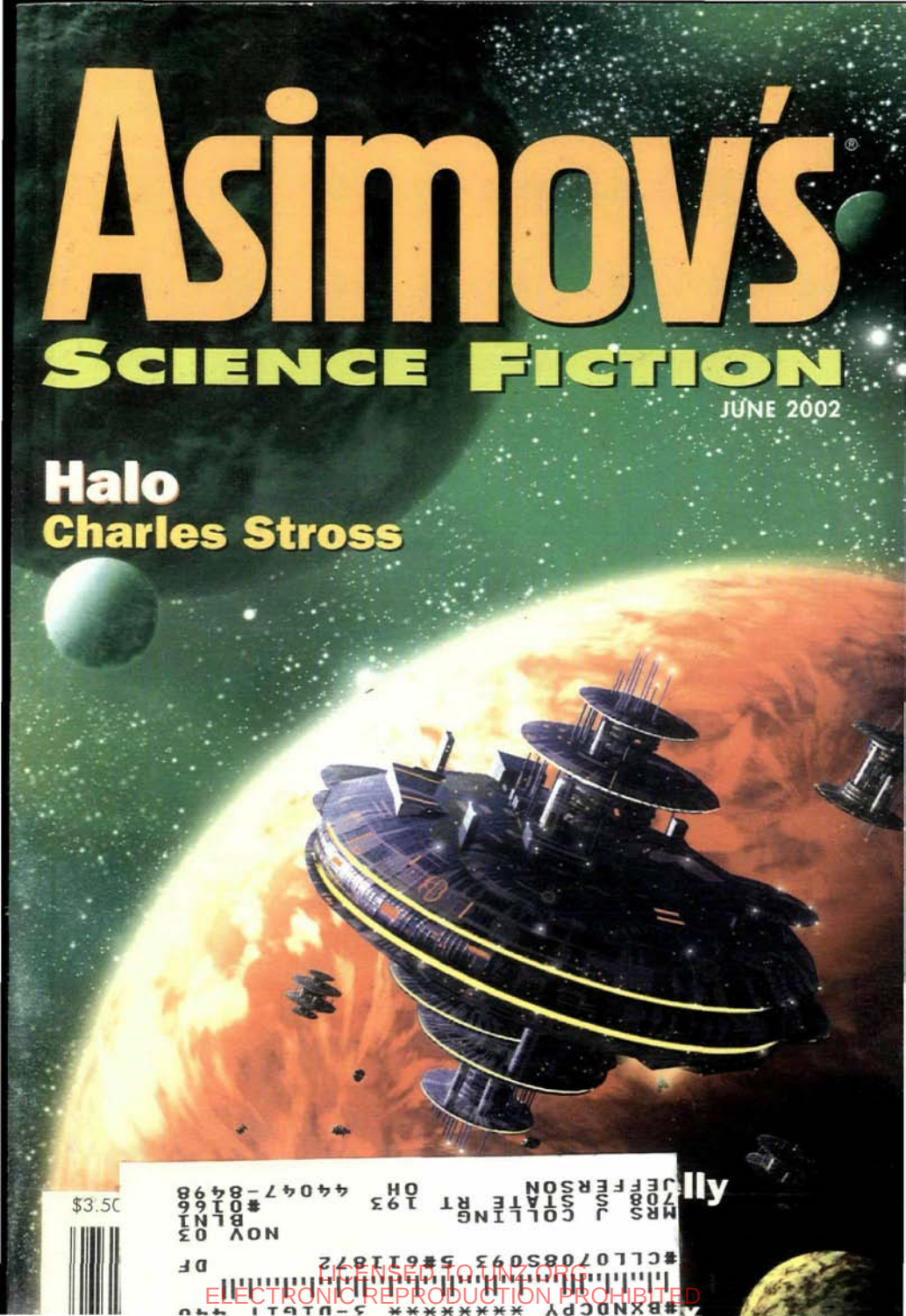

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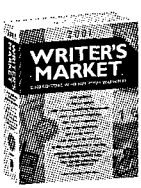

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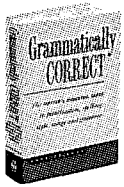

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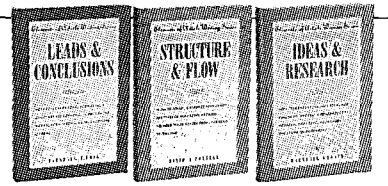

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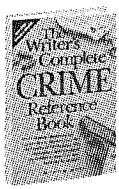

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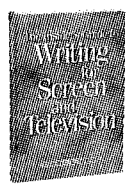

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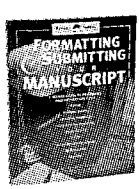

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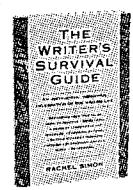

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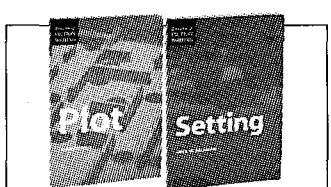

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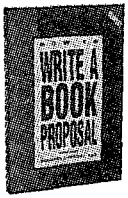

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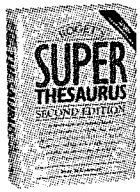

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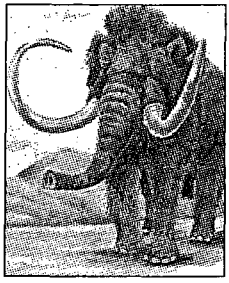

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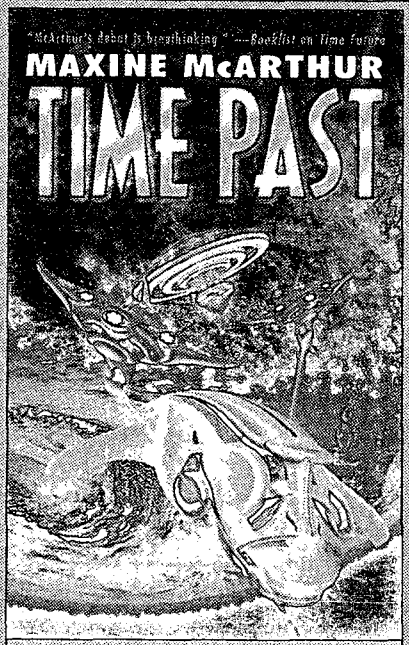

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REFLECTIONS

by Robert Silverberg

PROBLEMS OF TIME TRAVEL

Yesterday I made my hotel reservation for this year's World Science Fiction Convention in Philadelphia, which is still four months in my future as I write this, but happened a few months ago on the time-line of people reading this issue. And, probably not by coincidence, I dreamed last night that I had traveled back in time to the very first Worldcon I ever attended—also in Philadelphia, in 1953—and was at it in two identities at once, that of my original eighteen-year-old self and that of my current sixty-six-year-old self as well.

The idea was so strange that the dream awakened me in a state of bemusement, and I spent the next two hours unwillingly pondering the problems that such an event would create, when I would much rather have finished out my night's sleep.

The first problem I considered was what identity to use for my senior self. I was already registered, under the name of "Bob" Silverberg, as member #148 of the convention. Nothing would prevent me, really, from buying a second membership and walking around the convention with a nametag that proclaimed me to be "Robert" Silverberg. Although I attract plenty of attention at modern conventions when I walk around with my Robert Silverberg nametag on, no one would have paid any attention to the elderly man with the white beard who bore that name at the 1953 convention. The boy who called himself "Bob Silverberg" then was well known in the pages of the amateur science fiction magazines, and a few readers of the professional magazines would recognize the name because of the letters I had had published in their letter columns; but I had yet to sell my first professional story as of September 5, 1953, the Philcon's first day, and in the context of the era I was very far from being any sort of celebrity.

What, though, if some shrewd person noticed the similarity of names? Someone, say, like that smart-aleck kid from Cleveland, Harlan Ellison, who just happened to be my roommate at that convention? I could see him doing a double take at the sight of the old guy who had the same name as his pal from New York. He would study the old guy's eyes, his nose, the way he tended to smile without parting his lips. The resemblance—once you factored out the thinning gray hair and the white beard—would strike him as remarkable.

"What are you, his grandfather?" he would ask.

"No," I would say, truthfully enough. (My Silverberg grandfather was not named Robert, and he was long dead as of 1953, anyway.)

"His father, then?"

"Well, no, not that either." (My father, Michael Silverberg, was at home in New York right then, a youngish man of fifty-two.)

"Well, then, who the hell are you? You've *got* to be some relative of his!"

You see the difficulty.

Another complication I foresaw had to do with my ability to pay for things. Not that the expense of the convention would be beyond my present self—the cost of a hotel room

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was something like ten or twelve dollars a night, then, and meals were even more laughably inexpensive. But what would I use for money? Credit cards hadn't been invented yet. And the bills in my wallet probably wouldn't do me much good, either. I'm looking at some of the new-style twenty and fifty-dollar bills with me right now, the kind that are full of blank space and seem like fakes even to us twenty-first-century citizens. No hotel desk clerk worth his fifty-dollar weekly pay would have accepted one then. And even if I had had some bills of the 1990s with me, not greatly different from those of forty years earlier, there was always the risk that the little line "Series 1995," or whatever, would bring unpleasant remarks if a sharp-eyed 1953 restaurateur happened to notice it.

I would have to borrow money, I decided, from professional writers at the convention, my future friends and colleagues. That would mean confessing my identity as a time traveler to them and swearing them to secrecy.

Frank M. Robinson, for instance. My boyhood self really did meet Frank at that convention, starting a friendship that has lasted close to half a century now. I would go up to him and explain that I came from the year 2001, and whisper a few things to him that no stranger could possibly know about him, even one who was wearing a "Robert Silverberg" nametag. And I'd hit him up for ten or twenty bucks, promising to pay him back in a year or two in Cleveland or New York.

"Why those places?" he would ask.

"Because the next two Worldcons we'll attend together will be in Cleveland and New York," I'd say, walking away leaving him dumbfounded.

Then I'd go up to the formidable L. Sprague de Camp—something

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that my younger self would never have dared to do. I'd let him in on my secret, and prove it by giving him a capsule history of the years 1954-1980, including not only global political events but details of his still unwritten next novel. That would convince him: Sprague, the world traveler, would have loved to believe that time travel was possible. I'd borrow fifty from him. And then I'd give him a more than ample recompense by saying, "By the way, you ought to buy stock in Merck, Pfizer, General Electric, and Standard Oil of New Jersey and hold it for the rest of your life." (I wouldn't mention Microsoft, because Bill Gates hadn't yet been born in 1953.) "Oh, and you may also like to know that you and Catherine are both going to live to be ninety-two years old."

I'd borrow ten more from Harry Harrison, who had just bought an article from my other self for his magazine *Science Fiction Adventures,* and another twenty from Lester del Rey. ("Alfie Bester will win the Hugo for best novel on Sunday," I'll tell him. "*Astounding* and *Galaxy* will tie for best magazine. You wait and see.") I think that would have done it, though if necessary I'd have clinched my identity by telling him some inside stuff about his best friends of the era. And that would take care of my financial difficulties.

Then I'd be free to wander around the convention with the other seven hundred attendees. (Worldcons were a lot smaller in those days. Everything took place under the roof of a single hotel, rather than extending into a gigantic convention center next door.)

One thing I would take care to do would be to keep my distance from that kid Bob Silverberg. He was having the time of his life at his first Worldcon, and I wouldn't want to deflect him from his day-by-day time-line by imposing upon him the weird knowledge that his sixty-six-year-old self was at the con too. I'd watch him out of the corner of my eye, of course, that kid with the crewcut, wearing the Ivy League uniform of khaki slacks and white buck shoes, as he encountered for the first time all the people who would be such a huge part of his life in the decades ahead. But I wouldn't let him see me—not that he'd have been likely to guess who I was, bearded and gray as I am, because he would be accustomed to seeing our face only as the mirror image of the one we actually have. And not even he would have suspected that his self of forty-eight years to come was at the convention.

The beard might cause some raised eyebrows around the convention hall, though. The writer Fletcher Pratt wore a beard then, but hardly anyone else did in those days. Sprague de Camp was yet to grow his. The same, I think, with Theodore Sturgeon. Avram Davidson wasn't there. My beard would probably excite some worrisome curiosity. Who *was* this obviously distinguished old guy, anyway? What is he doing here?

My age would have seemed unusual, too. These were still the early years of science fiction in the United States: it was a young guy's game. Isaac Asimov was thirty-three years old in 1953; John W. Campbell, forty-three; Sturgeon, thirty-five; Robert Sheckley (the hot new writer of the year), twenty-five; Frederik Pohl, thirty-four; de Camp, forty-six. The venerable Fletcher Pratt was fifty-six. Willy Ley, the inexhaustible space travel propagandist who was that year's Guest of Honor, was just forty-seven. ("Willy," I would tell him, "we're going to land on the moon in 1969—I guarantee it." What I wouldn't tell him was that he was destined to die a few weeks too soon to see it happen.) Even

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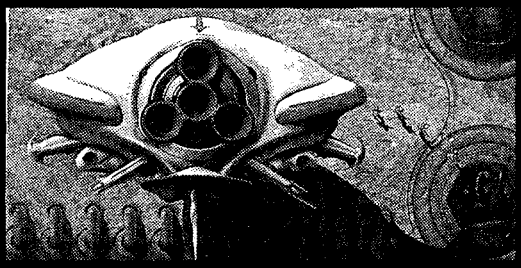
FALLEN DRAGON



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WHERE IMAGINATION KNOWS NO BOUNDS

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Hugo Gernsback, the founder of the whole American SF industry and the man for whom the Hugo awards were named, was only sixty-nine years old then. (He wasn't at the convention.) A man of my present years would have been an oddly conspicuous figure at the 1953 Philcon.

But I'd have managed. I'd have spent an interesting weekend skulking around, attending the program events, oddly skimpy by today's three-ring circus standards. (Willy Ley talking about rockets, Philip José Farmer about sex, Fletcher Pratt about robots, and five or six other things, including what was probably the first appearance of the "Women in Science Fiction" panel soon to become a fixture of these conventions.)

And then, right at the end of it all, I'd go up to my other self, who by then would be pretty well exhausted, since, as I remember only too well, he got something like ten hours of sleep throughout the entire weekend. I would point out our facial resemblance. I would show him the little scar on the back of my left hand. If need be, I would tell him a couple of things about himself that no one but he and I were aware of. And then, as he stood there gaping and goggling, I would say, "Listen to me, kiddo, you're going be famous beyond belief. All your teenage fantasies are going to come true, every single one. You'll sell hundreds of short stories and dozens of novels. You'll win a whole shelf of Hugos and Nebulas."

"Nebulas? What are they?"

"You'll find out in 1965. Oh, and five years after that you're going to be Worldcon Guest of Honor yourself."

"I *will?*"

"As sure as my name is Silverberg," I'd say. "Tell your buddy Ellison that he'll get all those awards, too. And a Stoker, an Inkpot, and a couple of Edgars and Howards, besides.—No, don't ask." Then I'd give him the most important bit of information of all. "Starting around 1956, kid, you're going to be making a lot of money. Buy blue-chip stocks with it and put them away for your retirement. Write down these names: Merck, Pfizer, Standard Oil of New Jersey, General Electric. . . ." O

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On the Net

James Patrick Kelly

CONS

filthy list

Have you ever checked out The SF Conventional Calendar at the back of this magazine? Compiled by the indefatigable Erwin S. Strauss, also known as "Filthy Pierre," it has been a regular feature of *Asimov's* for more than twenty years. If you consult these listings, you will discover that cons happen somewhere just about every weekend of the year, and on most dates, they happen in more than one place!

Now I know that many of you have been to at least one science fiction convention and that some are regular con-goers. But I suspect that a substantial fraction of you has never had the con experience. I myself was a reader—and later a writer—of this stuff long before I lost my con virginity. So as a supplement to Filthy Pierre's inventory, let's take a web-powered look at the ubiquitous SF con.

typical

How to describe a typical science fiction convention to someone who has never been? A con is a kind of organized party, run by fans for fans. They might make a little money, they might lose a little, but their lifeblood is not the big bucks but rather goodwill and volunteerism. A small regional might have a hundred to a hundred and fifty attendees, while 4,592 folks showed up for last year's **Millennium Philcon** <*http://www.netaxs.com/~phil2001/*>.

Con programming reflects the diversity of interests in fandom. Typically there will be an art show, in which works by members of the **Association of Science Fiction and Fantasy Artists** <*http://www.asfa-art.org/*> and others hang.

You will sometimes attend a convention where the advertised attendance seems vastly exaggerated. That's because as much as a third of the con is tucked away in rooms devoted to role-playing games and card games and board games and computer games. Would-be gamers searching for a good listing of online resources might start at **The Science Fiction Resource Guide to Role Playing and other SF Related Games** <*http://www.sflovers.org/SFRG/sfrgv.htm*>.

Then there are the filkers. *Filkers?* Filk is the mutant spawn of folk music and science fiction. For an introduction, try **Filk FAQS** <*http://home.earthlink.net/~kayshapero/filkfaq.htm*>.

For me, the one must-see of a con is the dealers' room. Here merchants sell all things science fictional: books, magazines, toys, swords, chain mail, trading cards, games, posters, prints, CDs, DVDs, instruments, figurines, buttons, jewelry, cloaks, and T-shirts. The dealers' room is where the different subgroups of fandom come together to shop. It is also an invaluable repository of expertise, since dealers are

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nothing more than devoted fans who sell stuff. They usually understand what's happening in the genre long before the rest of us do.

No doubt the most colorful fans are the costumers. Their big event is the masquerade, although there is also a long tradition of fans in costume wandering the halls of the convention hotel to display for their friends and to freak the mundanes. Find out more about costuming at **The Costume Network** <*http://www.costumenetwork.com/*> or **The Costume Page** <*http://members.aol.com/nebula5/costume.html*>. Closely related to the costuming but by no means the same are the doings of the **Society for Creative Anachronism** <*http://www.sca.org/*>.

But the two biggest subgroups of fandom are the media fans and the literary fans.

Fans love to ~~argue~~ ~~about~~ discuss their favorite TV shows and movies. Was **The Fellowship of the Ring** <*http://www.lordoftherings.net/*> a sacrilege or a triumph? Have you seen **The Phantom Edit** <*http://members.onecenter.com/hollywood/phantomedit/*>, the Jar Jar Binks-less version of **The Phantom Menace** <*http://www.starwars.com/episode-i/*>? Was **Buffy** <*http://www.buffy.com/*> better alive than dead? Most cons have multiple media tracks featuring non-stop screenings of new and old movies and videotapes of anime series and this year's flavor of TV shows.

Of course, as faithful readers, you might not choose to sit in a folding chair in a dark room when you could be putting faces to the names that you see on *Asimov's* table of contents.

panel animals

Most cons have a writer guest of honor, an artist guest of honor and a fan guest of honor. Some will also have a media GoH or a filk GoH or even an editor GoH. These worthies, their friends, family, and assorted other professionals and science fiction wannabes mingle with the fans at various venues, the most popular of which is the panel.

So here's the deal. Two, three, five, probably not more than seven people with opinions sit at a long table facing an audience. They have gathered to talk about some specific topic, say "Religion in Science Fiction" or "Worldbuilding" or "Breaking Into Print" or "Mars in Fact and Fiction." The purported topic may or may not be what the panel ends up discussing, which may or may not be a good thing.

A moderator attempts to control the flow of chat. The panelists introduce themselves and then it starts. At some point they might take questions from the audience. An hour or so later, the moderator thanks everyone and the audience claps and goes away.

Some say that you should never meet your favorite author. Not bad advice, sez Jim. Seeing a writer you really like on a panel can easily plunge you into a slough of despond. Lots of us get nervous, which may mean either that we go catatonic or we blather.

Some of us stack eighteen of our current books on the table in front of us and hijack the panel in order to flog them. Some of us are painfully shy and some of us are jerks. A few of us aren't quite as sharp as bowling balls.

On the other hand, I've watched panels soar. I've gotten story ideas at panels and I've taken notes at panels and many, many times I've nearly fallen out of my seat laughing at panels. And it is always enlightening to watch a civilized writer deal with an obstreperous microphone hog.

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NEW FROM *NEW YORK TIMES* BESTSELLING AUTHOR
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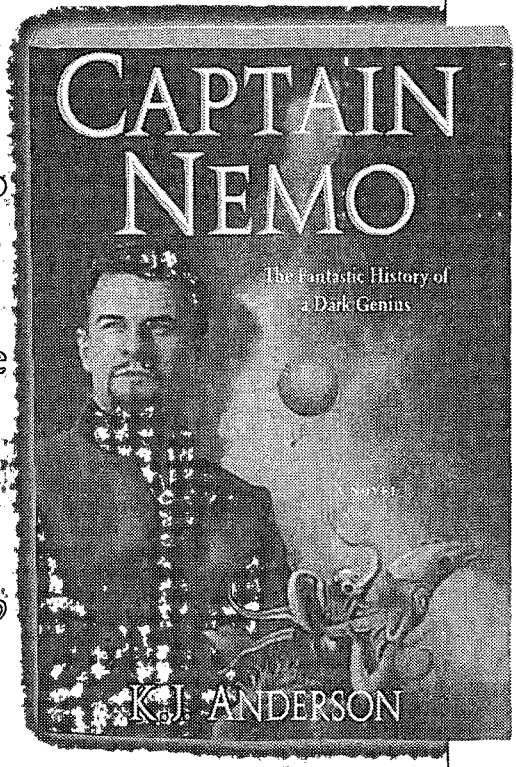
life was more
fantastic and
adventurous
than all
the fictions
it inspired?



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three cons

The Mother of All Cons is, of course, the World Science Fiction convention, or WorldCon, traditionally held over the Labor Day weekend. Although it usually takes place somewhere in the United States, it went offshore to Melbourne, Australia in 1999 for **Aussiecon 3** <*http://www.aussiecon3.worldcon.org/*> and will head north next year to Toronto, Canada for **Torcon 3** <*http://www.torcon3.on.ca/*>. This year San José, California hosts **ConJosé** <*http://www.conjose.org/*> from August 29 to September 2. The Guests of Honor are writer **Vernor Vinge** <*http://www.ugcs.caltech.edu/~phoenix/vinge/*>, artist **David Cherry** <*http://www.davidcherryart.com/*>, fans John and Bjo Trimble and Toastmaster **Tad Williams** <*http://www.tadwilliams.com/*>. Worldcons are twenty-four-hours-a-day, twelve-ring circuses and can be an overwhelming experience for a first timer. But they do draw an enormous number of professionals, not only writers but also almost all the print editors in the genre, not to mention a gaggle of agents. One of the highlights of any Worldcon is the Hugo Awards ceremony.

The World Fantasy Convention is a kinder, gentler version of the Worldcon. **World Fantasy Convention 2002** <*http://2002.worldfantasy.org/*> will be held in Minneapolis, Minnesota from October 31 to November 3. Guests of Honor include writers **Jonathan Carroll** <*http://www.jonathancarroll.com/*>, **Dennis Etchison** <*http://www.sfsite.com/isfdb-bin/exact_author.cgi?Dennis_Etchison*>, and **Kathe Koja** <*http://www.darkecho.com/darkecho/archives/koja.html*>, editor **Stephen Jones** <*http://www.herebedragons.co.uk/jones/*> and artist **Dave McKean** <*http://www.mckean-art.co.uk/*>. The secret masters of World Fantasy have deliberately chosen to keep it small by limiting admissions; it's the only con I know that can "sell out." This is a con focused on the print incarnations of fantasy and horror, so don't expect a media track or a masquerade or gaming rooms or a panel on the future of artificial intelligence. And yet it attracts an extraordinary number of professionals, almost as many as attend the WorldCon. The World Fantasy Awards are presented at a Sunday afternoon banquet.

It's getting late, but there's still time to plan for **Readercon 14** <*http://www.readercon.org/*>, which will open July 12-14 in Burlington, Massachusetts, with Guests of Honor writers **Octavia E. Butler** <*http://www.feministsf.org/femsf/authors/butler.html/*> and **Gwyneth Jones** <*http://www.homeusers.prestel.co.uk/dreamer/*>. Readercon also has a tradition of honoring a memorial Guest of Honor and this year the career of the late **John Brunner** <*http://members.tripod.com/~gwillick/brunner.html*> will be remembered. The reason I love Readercon is that it's all about the words. The people who read them mix effortlessly with the people who write them. Not only that, but this is the one convention where the short form contends on an (almost) equal basis with the novel. The panels are lively and unusual, the panelists ardent and articulate. And this year, Readercon will host the James Tiptree, Jr Awards.

so go

The first convention I ever went to was **Boskone** <*http://www.nesfa.org/boskone/*> in Boston, Massachusetts. It was 1975 and I had sold one story, which had not yet been published, and I was determined to discover what this con thing was all about. The problem was that I didn't

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know a soul at the convention. I arrived, wandered around for a couple of hours, sat in on a few panels, goggled at the costumes, maybe caught the end of a flick and then shrugged and went home. Of course there *was* a mid-February blizzard going on and I had at least an hour's skid back to New Hampshire, so I had good reason to beat a hasty retreat. But I just couldn't figure out where I fit in and I didn't go to another convention for three years. (I should say here that I have since found my niche at Boskone and attend pretty much every year.)

So if you have never been to a convention and are now tempted to try one, let me direct you to the excellent **SF Con Survival Kit for Neofans** <*http://www.locksley.com/neofans/index2.htm*>, an invaluable compendium of explanation, etiquette, and practical advice for con-goers. These pages originated from S. J. Dudley at **WesterCon** <*http://www.westercon.org/*> in Spokane in 1999. In particular, might I suggest that you peruse **How to Talk to the Pros** <*http://www.locksley.com/neofans/pros.htm*>, which offers sensible strategies for chatting up your faves without assaulting or insulting them.

Exit

But if you're not quite ready to plunk down a couple of hundred bucks to spend a weekend eating hotel food and staying up too late, the web offers a con-like experience that you can enjoy right in the comfort of your own home. If you haven't already discovered **The Asimov's Readers' Forum** <*http://www.asimovs.com/discus/*> perhaps you should give it a click.

As I type this in January, your fellow readers are arguing eloquently about *The Lord of the Rings* and Dean Kamen's Segway transporter. Hot topics include "What are some of the dumber science fiction ideas you can remember?" "Solar Flares," "Popular books you didn't like" and "Short science fiction of the nineteenth century." I read this board every day, and although I mostly lurk, I do post from time to time. So do at least a dozen other pros. Your Chestertonian editor Gardner Dozois is one of the most active posters—fan or pro. If you have something you've just got to say to him, this is the place. It's the next best thing to meeting him at a con.

Just tell him Jim sent you. ❍

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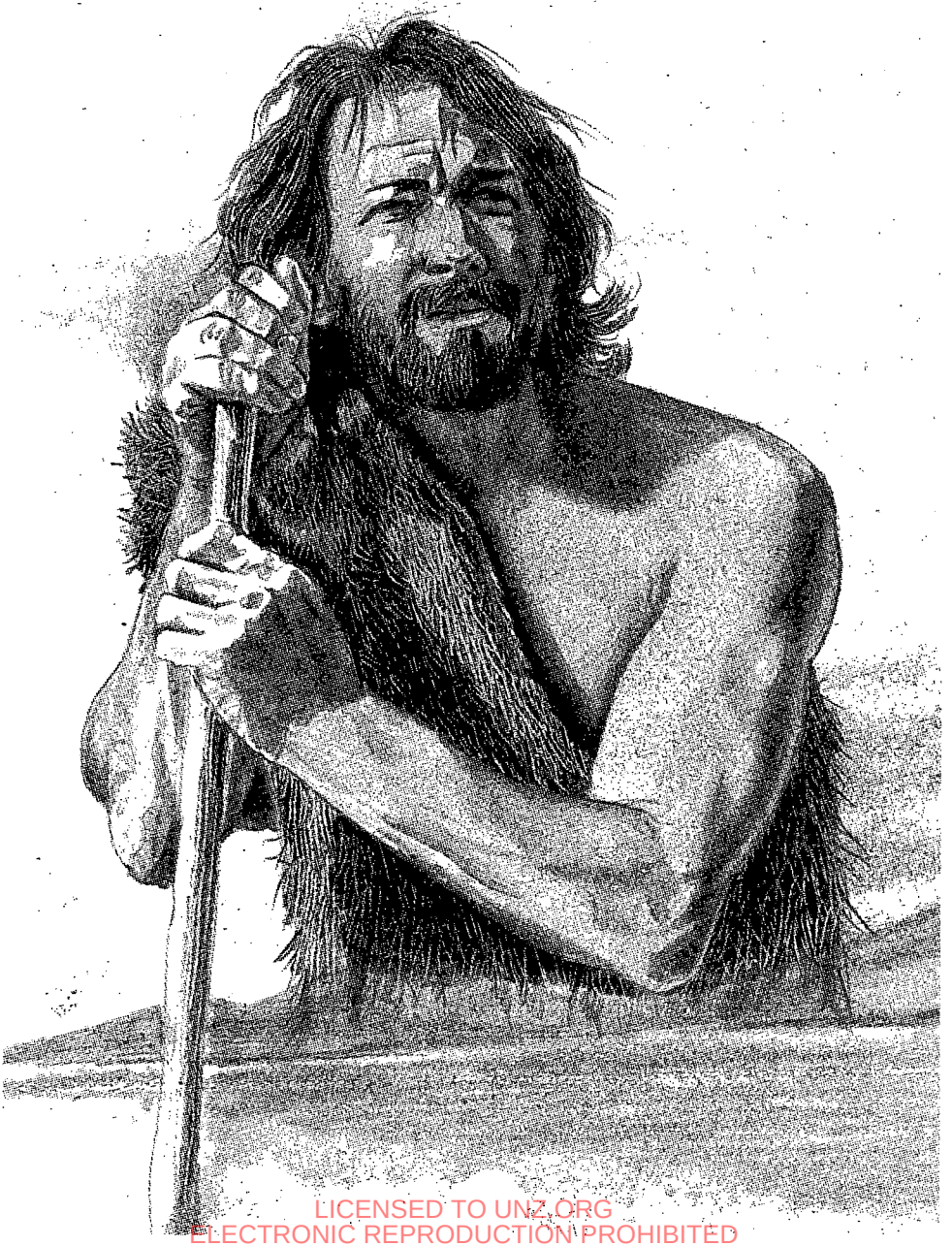

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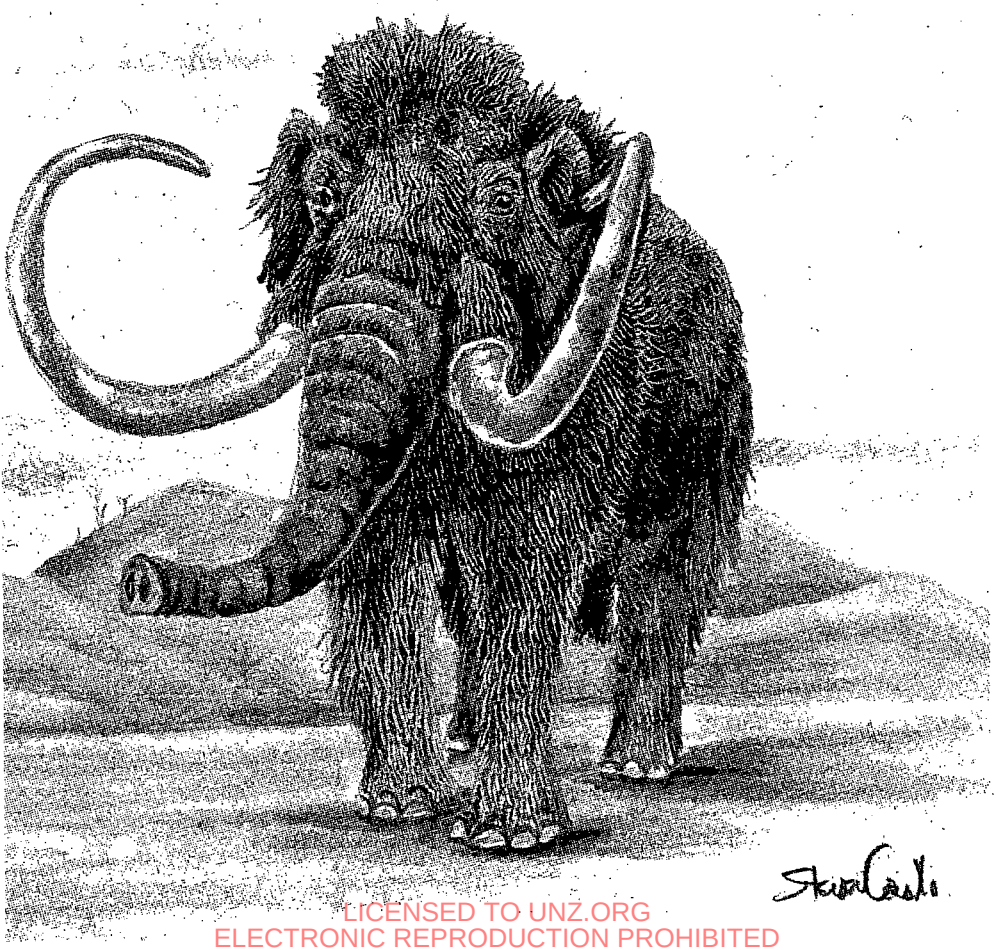
James Patrick Kelly

Illustration by Steve Cavallo

The author of this scientifically rigorous fantasy tells us, "I did way too much research on this story. I toured the cave last year, which is open to the public near the town of Rouffignac in southwestern France. It is so vast that, in order to view its wonders, you have to ride a little electric train." At the end of his visit, he knew he had to write a story about the Cro-Magnon people.



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Thumb sat on a rock, soothing his sore feet in the river, in no hurry to get home. The stories the shell people had told filled him with foreboding. Meanwhile, he was certain that the spirits had taken Onion's soul down into the belly of the earth while he'd been gone. The sun was still two hands from the edge of the sky. There was plenty of time before dark. Before he reached the summer camp of the people. Before they would tell him his lover was dead. While he tried not to think of her, a dream found him.

In his dream, a great herd of mammoths tracked down from the stony northern hills through the pine forest all the way to the river. There were five and five and five and *five* mammoths . . . and then more, more than Thumb could have ever counted, even if he used the fingers and toes of all of the people. They were huge, almost too big to fit in the eye of his mind. They trampled trees like tall grass, dropped turds the size of boulders.

Old Owl told a story about the spirit who became a mammoth. He called the beast a *furry mountain of meat*. Owl had been the last to see a mammoth, years ago when he was just a boy. The rest of the people knew mammoths only from the drawings in the long cave.

An animal the size of a mountain—how could that be?

When Thumb's herd of mammoths reached the river, they dipped their trunks into the water. In a dream moment, they drank the river dry. Turtles scrambled into the reeds for shelter. Fish flopped in the mud and died.

After her last baby had been born dead, Onion flopped on her mat like a fish.

Ruc-ruc-ruc-ruc-ruc!

The dream turned to smoke at the sound. Thumb leapt up and almost fell into the river. His feet had gone numb in the cold water and he couldn't feel the ground beneath them. He pulled on his boots, snatched his spear, fitted it to his throwing stick.

Ruc-ruc-ruc!

The rumbling came from upriver, around the bend. Thumb had never heard anything like it. An earth sound, like the crack of a falling tree or a boulder crashing off a cliff, except it was wet and hot and alive. A sound that only an animal could make.

He crept deeper into the thicket before he started upriver. Hunting courage pounded in his chest. He strained ear and eye and nose after the quarry. He was ready to jump over the sky. It was hard to make himself go quietly but he parted branches and slid through the leaves.

Man. Come out, man.

The whisper rasped inside his head. He felt it on the tip of his nose, on the hair of his scalp, at the root of his cock and on the bottoms of his tingling feet. It had to be the whisper of a spirit. This was his luck then, whether good or bad. He had no choice. He must obey. Thumb rose up and pushed through the undergrowth toward the water. He knew that he might be about to have his soul stripped from his body. The thought did not much bother him. If Onion were really dead, he would be with her in the belly of the earth.

I am, man.

Thumb was not surprised to see a mammoth standing on the opposite bank. It must have sent the dream and whispered to him in a spirit voice. The surprise was what he felt as he gazed into its round, black eyes. This was no monster that could break trees and drain rivers. It wasn't much taller than he was. Yes, the trunk snaked like a nightmare and the tusks

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were long and curved and dangerous, but as Thumb took its measure, his confidence surged. The people had no weapon that could wound a mountain or strike at a spirit. But this was an animal that men might dare to hunt and bring down. Thumb let a laugh bubble out of his chest.

"I am Thumb," he shouted across the river at it, "keeper of the caves!" Then he danced, five hops on the spongy bank. He finished by striking the butt of his spear against an alder.

The mammoth raised its trunk and trumpeted in reply. The piercing cry sent a shiver through Thumb. But he was not cowed. He had heard the death scream of a bison and a cave bear's roar.

"This is the valley of the people." He struck the alder again.

At that moment, something at the far edge of his vision jumped. A blur that might have been a deer, or a man in deerskin, plunged into the woods. Was it the spirit? Then why had it run away from him? The mammoth didn't seem to care. It turned away from Thumb, curled its trunk around a willow branch, stripped it from the tree and stuffed it into its mouth. Thumb studied the mammoth as it ate, knowing that he would have to report everything he saw to Owl, the storyteller, and Blue, who spoke for the people. Besides, someday he might paint it on the wall of the cleft, if such was his luck.

It had to be the hairiest animal he had ever seen. The coarse fur was the color of bloodstone. It had thinned along the slope of the backbone but was matted and thick at the flanks. When the mammoth brushed against a low hanging branch, a swarm of flies buzzed out of its mangy coat. Thumb decided that it must be a full-grown animal because of the size of its tusks. The tip of the left one was broken off. The top of its skull was a round bump, like half of an onion.

Suddenly Thumb went very still. He knew why the mammoth had appeared to him, of all people. It was a sign. A turn of luck.

"Is that it, great one?" he said. "Is that why you called me?"

The mammoth dipped its trunk into the river, sucked up water and then squirted it into its mouth. Thumb could see the tongue, gray in the middle, pink on the sides. Then he turned and ran hard for home. For the first time since the thin moon rose, he thought he might see his lover again.

The people made their main summer camp near the top of a low cliff overlooking the river. A rock outcrop sheltered the ledge where they chipped their knives and cooked their meals and laid their mats. When rain came, they ducked into a long lean-to covered with bison hides. The main hearth was at the center of the ledge. In the summer camp, the smoke of their fires could become sky and not sting the eyes and settle in the chest as it did in the winter lodge.

Five and five and five and three of the people gathered close around the hearth that night. Ash and Quick and Spear and Robin and Moon and Bone were away, trading chert with the horse people and waiting with them for the arrival of the reindeer herd. It was the Moon of the Falling Leaves. Thumb's breath made clouds in the cool air.

"Are you warm yet?" he said.

"My heart is," said Onion. He had his arm around her waist and they snuggled beneath a bearskin blanket. She was thin as grass. He could feel her ribs beneath his moist hands. Even when she was pregnant, she was never as big as the other women. Now her breasts were like those of a girl.

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Thumb had not known Onion when she was young. She had come to them from the horse people five and three summers ago, a round and beautiful woman. Since then she had given birth to three babies, all dead, and had gotten thinner and thinner. Thumb kissed her pale face. The last had almost killed her. But she was still beautiful. He could wait until she was stronger before they would lie together as lovers. That would be soon, he hoped. Her breath tickled his neck.

Bead finished whispering to Owl. The storyteller got up painfully, carrying his years like a skin filled with stones. He hobbled around to the back of the hearth and turned so that the flames were between him and the people. Firelight caught in the creases on his face. Just before he spoke, he straightened and squared his shoulders. Then his voice boomed as it had for all the summers Thumb could remember.

"This is a story of Thumb," he said, "who is the son of my sister and who walks both in the light of the sun and the darkness of the two caves. He gave his story to me so that I could give it to you. It has become a story of the people. I will tell it to you now, even though it doesn't have an ending."

The people yipped and grunted with unease. A story without an ending was bad luck.

Actually, Thumb had told his story mostly to Bead, Owl's lover, and Blue, who spoke for the people. Owl had listened for a while but then had dozed off, as he often did late in the day.

"We know," said Owl, "that Thumb loves Onion and Onion loves Thumb. They have slept nose to nose, belly to belly for five and three winters. She eats the meat he brings her. He eats the roots she digs for him."

"When you find time to hunt," whispered Onion.

"When you dig something besides stones." Thumb gave her a gentle nudge.

"Thumb needed to make paint for the new cave, which some call the cleft. For the red, he had to collect bloodstones from the shell people's land. But after bearing a baby that never breathed, his lover became sick with a fever. He had a hard choice. No one ever wants such a choice. Thumb loves Onion, but because he loves the people too, he left her and went to the shell people's land."

Quail gave a low whistle of approval. Thumb was pleased when everyone joined in. Even Owl. Even Onion. Thumb's cheeks were warm.

"While Thumb was gone, a stranger came to us. He brought food gifts of two eels and a badger skin filled with apples, so we welcomed him. He told us his name was Singer. He was an old man, with white and gray and not much brown in his beard. He wore a headdress of the feather people and the deerskins of our people. But he didn't say where he came from and we didn't ask. Although we are a curious people, we are also polite."

Owl paused and waited for the laugh.

"When Singer saw Onion bundled by the fire, he told us that she was going to die. We all thought that he was right. Singer said that he could use his luck to turn hers, but that we must let him do whatever he wanted with her. We talked about what he said. It seemed strange that a man could turn his own luck or anyone else's. But none of us could help Onion. Finally we let Blue speak for us. He told Singer to use his luck.

"Singer crushed herbs from his pouch in a wooden bowl, mixed them with water and gave them to Onion to drink. She went limp but her eyes stayed open. It was as if her soul had left her body. Then he picked her up in his

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arms and carried her to the river. He laid her on the bank and took off her deerskin shirt and pants. With his two hands he scooped mud onto her naked body, covering her until all we could see was her mouth and her nose. There were some of us who thought this was bad luck." Owl struck his chest with his fist. "Or at least crazy luck. But we said nothing. When Singer finished with the mud, he began to sing."

Owl paused, gathered himself. His voice quavered under and around and sometimes on the notes.

"'Spirits, look at this woman!
I have buried her for you.
She has learned what it is like
in the belly of the earth.
Now you won't have to teach her.
Leave her in the world awhile.
Let her wake with her people.'"

Onion had gone stiff as a tree stump beside him. "Are you all right?" said Thumb. She nodded and squeezed his hand. With a feeling of dread, Thumb understood that even though she seemed better, his lover was still tangled in the stranger's luck.

The effort of singing Onion back to life, even though it was just part of the story, left Owl exhausted. He sat down abruptly and fell silent. Bead dipped a dried gourd into a water skin and scrabbled across the ledge to him. As he drank, she whispered to him. The old man's eyes were as distant as the ice mountains. The people sat in polite silence for several moments, waiting for him to begin again. Bead's talk grew more heated; Thumb could make out words. *Lose . . . Foolish . . . Let me!* Finally Owl grunted and pushed her away.

"A fly is buzzing in my ear," he said. "It asks if a woman can tell a man's story." A few people laughed. Bead's smile was tight. She scooted backward but did not rejoin those around the fire. Instead she crouched a few paces away from Owl and waited.

"Then Singer finished his luck song." The storyteller spoke from where he sat, which made everyone nervous. But it was better that he tell the story sitting down rather than stop. It was very bad luck to stop in the middle of a story, especially a story that had no end. "He took off his own clothes, picked Onion up and waded into the water. When the river had rinsed her of the mud, he climbed out of the river and dressed her. Then he kissed her as if she were his lover. She was asleep now, with her eyes closed. A deep sleep, yes, but not the almost-death that had squeezed her before. We could see her breathing. She didn't wake up until the next day. By then, Singer had left us." Owl lowered his voice so that everyone had to lean forward to hear him. "Nobody saw him go. Did he melt like snow? Blow away like smoke?"

He paused, even though he knew no one would answer.

"He was gone." Owl stared into the fire. "All he left was his luck."

The people waited again.

"And this story," he muttered finally, as if speaking to himself.

Silence.

"Is that all?" said little Flamesgirl, who had just lost her baby teeth and still didn't have her name. She had been squirming on her mother's lap during Owl's story. "What about Thumb? What about the big beastie?"

Flame pinched the girl's cheek hard. Everyone knew that she talked more than her mother ought to allow.

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"The mammoth, old man," Bead called to Owl, loud enough for everyone to hear. "I think you haven't told about the mammoth."

Owl grunted. "Old man." He struggled to his feet. "She calls me old man." He shook his head in disbelief. "But when I was young, just five and four summers old, I saw a mammoth. Maybe the last one. I will never forget it. Such a fearsome creature . . . a nose like a great snake and tusks that curved to the clouds. It was covered with shaggy brown fur. When it roared, birds fell out of the sky. It was so huge that the earth shook when it walked . . . and its foot, one foot could crush three men . . . because it was bigger than the trees, I saw it . . . a furry mountain of meat. . . . What?"

As Owl was speaking, Blue rose and approached him. "I would like to finish this story, Owl." Blue touched his arm; he looked very embarrassed. Thumb was embarrassed too. "Will you let me?"

Owl puffed himself up. "Are you the storyteller now?"

"Thumb saw a mammoth today," said Blue gently. "Remember?"

Owl snorted and then glanced over at Bead. Her head was down, as if she were counting her toes. Owl's jaw muscles worked but he made no sound. Blue waited. Then Owl said, "Tell them whatever you want." He turned away, brushed past Bead and stalked into the darkness. Thumb could hear him climb the path to the top of the cliff. A few heartbeats later, Bead went after him.

"He has seen many summers," said Blue, "They have filled him up, I think. Still, it is luck to have him with us."

Then Blue reported to the people what had happened between Thumb and the mammoth. His words didn't sing like Owl's did and his voice never touched the moon, but the story was finished. Afterward there was not much discussion of what had happened that day. A sadness had fallen on the people like a cold rain. The mothers huddled briefly, no doubt talking about whether it was time to change storytellers. Most of the people lay down on their sleeping mats, glad to let the day pass into story.

Onion curled next to Thumb under their bearskin. They were so excited to see each other that they couldn't get to sleep. They talked in lovers' whispers, so as not to disturb the others.

"Owl was right to tie the luck of the mammoth to the stranger's luck," said Thumb, "even if he did forget what he was trying to say. I feel like I'm still bound to it." He sifted her hair through his hands. "And you to this Singer?"

"Maybe. I don't know." She shifted around to face him. "I'm sorry, but I don't remember much about him. They told me what he did but I heard the story as if it had happened to someone else. All I know is that I am better now. And that you're here with me."

"What do you remember?"

"I remember my baby was dead. It was a boy," she said.

"I know. I was with you." Thumb rested his hand on her hip. "But then I had to leave."

"After that all I remember are faces and lots of talk that I couldn't quite understand. And just a bit of a dream." Onion stroked his cheek, as if to assure herself that he was still there. "I was in a cave. I had no lamp and it was dark but I could see a tiny light, far off, like a star and the light called my name. I think it might have been Singer. I tried to crawl toward the light but my arms and legs wouldn't move. Then I heard a wind sound, but it wasn't wind. It was the cave, breathing." She shivered. "That's all."

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"It was the long cave," said Thumb, although he didn't believe this, "and it was me, looking for you."

Someone was playing a bone flute. Probably Oak, who usually had trouble sleeping. The notes were soft and drowsy and a little downcast. It was a song of leaves dropping from trees and birds flying south, a song of the end of summer.

The next morning, Blue asked Thumb and Oak to walk with him to the river for a hunting council. Although Oak was Thumb's half-brother, they had never been close. Oak was younger than Thumb. Their mother had died giving birth to him and their luck had been tangled ever since. But with Quick and the others tracking the reindeer herd, Oak was the best hunter in camp.

He was a simple man, better with his hands than his head. He could throw a spear farther than any of the people, but he could scarcely tell a story straight through. He had no lover and so was always restless. The mothers said that he would leave the valley some day.

The three men carried water skins down the path to the river. Since Blue had called the council, Oak and Thumb waited for him to begin it. At the river, instead of filling his skin, he hung it on a branch. The others did the same and then the three sat facing each other.

"So, do we hunt it?" said Blue.

Oak snorted in disgust. "The question answers itself."

"We could," said Thumb, "if it's just an animal."

"What else would it be?"

"A spirit."

Blue frowned. "You think it is?"

"My thoughts are thick as mud," said Thumb. "I heard a voice in my head. But as soon as I saw the beast, I knew that we could kill it." He shrugged. "You can't kill a spirit."

Oak touched Thumb's knee. "How many men would it take, brother?"

"Five and five, at least. It was feeding, so I'm not sure how fast it charges. More would be better. It'll be dangerous."

"So we had better wait for Quick to come back," said Blue.

Oak made a sour face. "And let it wander off? Blue, this is a mammoth. Think of what people will say of the ones who bring it down. You want to give those stories to the shell people? The horse people?"

Blue shook his head. "Men may die unless we hunt at full strength."

"You could die on the way back to camp if you trip over a stone. I'm not afraid."

"I'm not afraid, either. I'm just not stupid."

Thumb's attention drifted. Their argument was like the chitter of magpies. There was something that he needed to understand about the mammoth. Something that he couldn't talk or think his way to, something that hid underneath words. He began to clear the ground in front of him, pulling grass, sweeping away rotted leaves.

"We've got Horn and Quail and Bright and Rabbit," said Oak. "And you two, if you both agree,"

"Bright is still a boy."

"He has his name."

"He was born the summer before Onion came to us!"

Thumb fluffed the exposed dirt and then began to work with his drawing

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thumb. The lines were swift and sure. Round head, sloping back, trunk, long tusks.

"What is it?" Oak's voice came from a great distance.

Thumb opened himself and a dream found him.

"Quiet!" said Blue. Thumb could barely hear him over the blood pounding in his ears.

In his dream, the mammoth was already dead. It was lying on its side in a clearing. Flies buzzed the wounds on its neck. Two spears stuck out of its broad chest. The blood was dry.

Thumb was alone with the mammoth. There were no other hunters, no one to thank the mammoth for giving its life to the people and to speed its soul. He knelt beside the mammoth and put his hand on its flank. "I thank you, great one, for the sacrifice you have made. Your death is as precious to us as your life was to you. We needed you and so we killed you. We will use your flesh and bones to make our lives better. Someday when the spirits come to take us from our bodies, we will see you again in the belly of the earth." Then he got up, his nose full of the stink of the mammoth. It was already beginning to rot.

He walked around it once, then walked around it in the opposite direction. In his dream, Thumb was uneasy. It was bad luck to waste any kill, and this was a *mammoth*. Where was everyone?

An elm tree stirred at the edge of the clearing. In a dream moment, its roots gathered into two legs and its branches became the arms of a man. Leaves grew into long gray hair and a beard. The tree man was wearing a deerskin shirt and leggings. He did not speak but held out open hands to show he meant no harm. Thumb thought this might be the stranger who had saved Onion.

Man, I am. It was the voice Thumb had heard by the river.

Singer approached the mammoth. He touched one of the dark eyes and the lid closed. He whispered to the mammoth and its trunk twitched. When he shouted, the sound staggered Thumb and he fell backward.

The mammoth shivered, rolled over, and got to its knees. Thumb let out a strangled cry of joy and surprise and fear. No animal had ever come back from the dead. The mammoth stood and shook the spears out of its side. Thumb's eyes burned.

Singer loomed over Thumb and started kicking at the ground. He bent to uproot grass, clear leaves. The mammoth trumpeted and lumbered into the forest as Singer squatted. He began to draw in the dirt.

The lines were swift and sure. Round head, sloping back, trunk, long tusks.

"Thumb, are you all right?" Oak was trying to sit him up.

"You shouldn't touch him," said Blue, but he didn't interfere.

Thumb's ears still rang with Singer's shout. He tried to focus on Blue and Oak. They shimmered like they were under water.

"He's crying," said Oak. "Brother, what's wrong?"

Thumb wiped at the wetness under his eye and touched the fingertip to his tongue. In the taste of his tears he saw mammoths flickering on the walls of the long cave. The vision shook him. It was dream knowledge, but the dream was over. The spirits must be very close. They had come to push him to his luck.

Thumb struggled up and pulled his water skin from the tree. "No more talking." He dipped the skin into the current and let it fill. "I'm going to the

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long cave." He slung it over his shoulder and started toward the camp at a trot. "I'll know what we should do when I get back."

Owl liked to call the cleft *the new cave,* but then he liked to stretch words. Actually it was a place where two huge rocks had fallen against one another, and it was mostly open to the sky. All the paintings and marks on the walls of the cleft had been made either by Thumb, or his teacher, Looker, or Looker's teacher Thorn. They had painted reindeer and red deer and ibex and horses and bison and the secret names of spirits.

But no mammoths. The mammoths were in the long cave.

The long cave was a mystery. Nobody knew who had put their dreams on its walls. Nobody knew how big it was. Owl told a story about the time old Thorn had found a tunnel that led from the long cave to the belly of the earth. The keeper had blocked it with stones to keep the dead from coming back to life. The women told stories about souls without bodies, who wandered the earth, forever alone, but none of the people had ever seen one. Thumb had looked many times for Thorn's tunnel. He had never found it. But even though he knew the long cave better than any of the people, there were still parts of it that he had yet to see. He had never quite gotten the courage to lower himself into the well in the Lodge of Mother Mammoth. And he was too wide in the shoulders to wriggle through the narrows past the abandoned bear nests.

"I don't care," said Onion. "I'm coming with you."

Two mothers who were chipping new stone scrapers covered smiles with their hands.

Thumb wrapped a lump of boar fat in a maple leaf and bound it with braided grass. "But I don't want you to." He put it with his lamp.

Onion didn't bother to answer. She was already packing food for the trip, a handful of hazelnuts, a parsnip, salsify root, and a dried fish.

"You're not strong enough." Thumb didn't like to quarrel in front of other people.

Onion liked nothing better, especially since his shyness gave her an advantage. "I'm strong enough to sit and tend fire." She stooped to tie the sinew laces of her boots. "And that's all I'll do if I stay here."

Thumb made his best argument. "It's too far." The long cave was a good day's hike from the river. Its mouth was set into the stony ridge that divided the river valley from the lands of the horse people. "Besides, I might be gone all night. Maybe longer." Thumb continued to wrap leaves around pale chunks of fat for the lamp. "I don't know where the dreams will take me."

When he glanced up, Onion was standing with her hips cocked to support the bulging skin she had slung over her shoulder. She smiled at him and he shrugged. He knew that smile. The argument was over.

It was not yet midday when they started out. They talked at first. He told her about his trip to the country of the shell people. They were telling stories about a new people who had come down from the ice mountains. The shell people had not yet seen these strangers themselves, but had heard about them from their distant neighbors, the sky people. The newcomers were said to have four arms. Dogs followed them and obeyed their orders.

"Then we'll call them the dog people," said Onion.

"That wouldn't be very polite." Dogs were scavengers, like crows and rats.

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The only thing they were good for was eating, and they were often too stringy for that.

"Then call them the ice people." Onion laughed. "Maybe they melt in the summer and their dogs drink them."

Thumb was pleased to see Onion keep good pace and good conversation. She was definitely getting better.

Onion told him that the mothers had decided to ask Owl's son Bone to become the storyteller, even though he was still learning stories. He had only begun training with his father four summers ago but he had a big voice and an easy laugh. His words didn't always light the stars, but he was still young and he would have Owl to teach him.

As they climbed farther away from the river, they dropped into hunting order. Game was scarce near the summer camp, but here they might surprise a hare or a squirrel or even a deer. Thumb moved ahead, stepping quietly, spear at the ready. Onion trailed behind, picking mushrooms and stopping to roll logs over in search of grubs and salamanders.

That night they lay together as lovers. Afterward Thumb wept for their dead baby boy.

The sun was three hands from the dawn edge of the sky when they reached the cave the next day. Onion gathered tinder and kindling while Thumb pulled dead branches from trees and dragged them into a pile. The people visited the long cave regularly and had built a good hearth just inside the entrance. Thumb watched Onion take the smoldering coal she had brought from the hearthfire and set it on the tinder.

"I thank the first mother for this fire," she said. "She makes the warmth of the world." She blew on the coal until it smoked and the tinder caught fire.

When the pile of firewood reached Thumb's waist, he went out to gather birch bark. He peeled what he could and cut the rest with his chert knife. He was careful not to cut a complete circle of bark, which would girdle a tree and kill it. Thumb folded the bark again and again into a wad and then wedged it into the cleft of a green stick. When he had made three of these birch torches he returned to the cave. He was surprised to find Bead, Owl's lover, sitting at the fire next to Onion. She was rocking back and forth, as if in mourning.

"I tried to talk to Owl last night, but he wouldn't hear me," she told them. She looked as if she had slept on a sharp rock. "This morning I followed him here. He walked into the cave without fire or food, with empty hands. When I called for him to stop, he ran from me. I tried to find him but I have no light. I've been looking . . . I don't know. Most of the day." Her hands and face were dirty and her doeskin shirt was smeared with chalky mud. "He's gone, I think."

"I'll find him." Thumb gestured at the torches he had made. "And I have a lamp."

"What if he doesn't want to be found?" said Bead. "He is ashamed, Thumb. And afraid." She tugged at her hair hard enough to pull a few gray strands out. "And he is an old fool."

"He wants to die in there?" said Onion.

"I think," she said. "Where no one can see him. Where he can't even see himself."

"The spirits will see him," said Thumb. "They are thick in this cave. It will make bad luck for the people."

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"If he thinks his own luck has run," said Onion, "maybe he doesn't care."

They sat for a minute in silence, listening to the fire, watching sparks fly up to become sky. In his mind's eye, Thumb tried to see Owl as someone who would knowingly make bad luck for all of them. He couldn't. It wasn't the kind of story Owl would want people to tell about him.

"He isn't like that," he said. "He's gone to the cave as any of us would. To open himself to a dream. To find his luck, not to be done with it."

"Maybe," said Bead.

Was this why he had been brought to the cave? To save Owl? Thumb stood and touched one of the birch bark torches to the fire. "I'll find him." He tucked the other two torches into his belt. "I'll bring him out." The way the two women were looking up at him almost made him believe what he was saying. "And then we'll tell him his own story, again and again, until he understands why we need him."

Some of the people were afraid of the long cave. Most thought it a cold, forbidding place. Thumb didn't understand this. Yes, it was crushingly dark. But the cave was ever untouched by the outside. It was always the same, always itself. In the heat of the summer, it was cool and free of bugs. When wind screamed off the ice mountains in the winter, it was the warmest place in the world. Time slowed in its never-ending night. Dreams lurked at every turn.

The mouth of the long cave was wide and welcoming. It opened onto a huge, damp room, with a ceiling too high for torchlight to reach. The mud on the floor was as sticky as pinesap. Before long, black silence closed around Thumb and all he could hear was the hiss of the torch and mud squishing beneath his boots.

He walked for some time, picking his way down the path trod by countless feet. On his right he passed the Empty Ways, a deep and complicated branch that, for some reason, had never been decorated. He had once asked Looker why they couldn't paint their dreams in this untouched section. Looker had cuffed him with the back of his hand. "This cave belongs to the dead now," said Looker. "Paint here when you're ready to visit the belly of the earth."

Was Owl hiding in one of the Empty Ways? Thumb called to him but got no reply. Owl had been to the cave many times. He would find his way to the Mother's Lodge. To the place of dreams.

Thumb's first torch began to gutter and he lit the second as he came to the underground river, where the main passage veered sharply to the right. This was not a true river like that of the people, more like a stream, but it filled the cave with its gurgle. The ceiling was low here, and the chalk walls were moist and yielding. After a while, Thumb came to First Mammoth.

First Mammoth had been scratched in the soft surface of the wall with a stick, or maybe even a finger. It was about as long as a marmot. Thumb could have carved it himself in a few minutes, if such had been his luck. First Mammoth had to be very old. Its lines weren't as sharp as most of the other carvings. The moisture in the cave had blurred them over countless summers. A long dead cave bear had once sharpened its claws on top of First Mammoth, and even its marks had begun to fade.

Thumb switched the torch to his left hand and with his thumb traced First Mammoth's lines just above the soft surface of the wall.

"I honor you and the one who carved you," he said. "May I meet both of

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your souls someday when I leave my body." He tugged the last torch out of his belt and leaned it against the wall. "Keep my torch safe and dry, First Mammoth, so I can use it to find my way back to the sun."

A little further on he entered the Council Room, where the cave branched in two directions. The walls of the Council Room were covered with wonders. To one side was the chiseled profile of Father Mammoth, whose eye saw all that happened in the cave. To the other were three wooly rhinoceroses, one so fat that its belly scraped the ground. Next to them was the Council of Mammoths.

A line of five mammoths marched left. Five more marched right, as if to cut them off. The two leaders faced each other, eye to eye, their trunks touching. They had been drawn by rubbing soot stone right onto the rock, the surface of which was smooth but not flat. Whoever had created these mammoths had used dips and bulges in the rock to make them leap from the wall into the mind's eye. As Thumb passed his torch from one line to the other, the play of light made the mammoths stir.

The first time he'd seen the Council of the Mammoths, Thumb thought that the two herds were about to fight. Then Looker had explained. Each of the herds walked its own land. Where the leaders met was the boundary. The mammoths touched trunks as brothers might touch fists or sisters hug. This was a dream of friendship, not of rancor, and it was meant to speak to the people who kept the cave. The spirits commanded them, said Looker, to live at peace with their neighbors. It was their luck to take lovers from the shell people and send their children to live with the horse people and to welcome all strangers.

Man, whispered a voice in Thumb's head.

Thumb whirled, but he saw no one. "Who are you?" He felt as if he were standing on the sky and gazing up at the ground. "Tell me!" The walls swallowed his anger. This was the place of true dreams and he was its keeper. "This is the cave of the people! You don't belong here!"

Man, I am.

Thumb staggered across the Council Room and fell to his knees before Father Mammoth. "Father, I've come looking for Owl, the storyteller. Now something in your cave calls me. I don't understand what is happening. Show me what I must do." And then he opened himself.

No dream found him.

Thumb didn't know what to do. Shocked, he knelt there waiting. Waiting. This had never happened before. Father Mammoth stared down at him but sent no dream. The spirits had forsaken him.

The torch began to gutter.

Man. Come to me.

Thumb fumbled for his lamp. Still on his knees, he flattened a wad of boar fat into the bowl, pinched some moss for a wick and pressed it into the fat. He lit the lamp from the failing torch.

Man.

"What?" he muttered as he stood. His knees creaked. How long had he been kneeling on the cold stone? He left the torch behind and started down the passage toward the Lodge of the Mother Mammoth. The world shrank as he left the Council Room. The torch had cast a strong light, but the lamp burned with a single flame. When he held it at eye level, the floor of the cave disappeared. Thumb groped forward, his free hand brushing the wall. He saw more with his feet than with his eyes. Soon he came to one of the nar-

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rows. He stooped, and then crawled on hands and knees. He picked his way slowly, holding the lamp level so as not to spill melting fat or snuff the flame.

The ceiling in the Mother's Lodge was low enough that he could reach up and press his palm flat against it. It was decorated with mammoths and bison and ibex and horses and rhinoceros, outlined in black soot stone. Some stood on top of one another. Upside down jostled right side up. Here was a many to make a man's head swim. Thumb could as soon count the leaves on a tree or the hairs of Onion's head. Ordinarily the spirits of the cave were most present in this great gathering of animals. When Thumb guided people to this room, dreams spun from the ceiling like snow from the winter sky. But now he gazed up in vain. He felt as if his soul had turned to stone.

"Why am I here?" He began by searching the edges of the room, carrying the lamp low so he could see the floor. Nothing. "Talk to me!" Then he struck out for the opposite wall, crisscrossing back and forth. On his fourth traverse, his foot nudged the body.

Thumb rolled Owl over and felt his throat for the beat of blood. He was alive. Thumb squatted, thinking of how to get the old man out of the cave. If he slung Owl over his back and tried to carry him, he'd probably douse the lamp. Besides, how would they wriggle through the narrows? He decided that if he couldn't wake Owl up, he would have to leave the cave, build a litter and bring Bead back to help.

"Owl." Thumb chucked the old man's chin. "Can you hear me?" He leaned close and blew on his eyelids. "Uncle?"

"Hmm."

"It's me, Thumb."

Owl stirred and put his hand to his forehead. Then he opened his eyes. Spears of light, brighter than any fire Thumb had ever seen, shot from Owl's eyes and then winked out. Thumb screamed and sprawled backward, spilling hot fat on himself and snuffing the lamp's puny flame.

Darkness closed around him. He felt it press against his skin, stop his nose, slither down his throat. He tried to scream again but the darkness was smothering him. Terrified, he scuttled across the floor until his back was against a wall. He heard a wind sound, but it wasn't the wind. It was the cave, breathing. Then the room erupted with light. The thing that was Owl but wasn't stood before him. He held his hand above his head. It was on fire and his fingers were bright, flickering flames. Thumb looked up and saw something he had never seen before. All the animals of the Mother's Lodge stared down at him. All, all at once. The wonder of it was almost enough to make him forget what was happening. Owl seemed impressed too. For a moment, he paid no attention to Thumb. Instead he strode around the room, taking in the drawings as if they were old friends. Finally he approached Thumb, who tried to press himself into the rock.

Man, this is not a dream.

Thumb couldn't speak. He could barely nod.

The story of Thumb.

The light from Owl's fist was painful. It stabbed through Thumb's head into his mind's eye.

He is great, father to many peoples. He lives many summers.

Thumb had no children. All Onion's babies died. Owl's skin began to shift like smoke. Thumb could see his bones glowing.

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But he kills the last mammoth. This tangles his luck. When he dies, his soul never gets to the belly of the earth.

Fear gave way to rage. "How do you know this? Who are you?"

Owl lowered the shining fist toward Thumb. Thumb couldn't move, couldn't protect himself.

Man, I am.

Thumb had grown roots. His arms were heavy as logs.

But once I was. . . .

All he could do is look up as Owl touched him.

. . . Thumb.

The light filled his head, driving out all thought.

The next thing Thumb knew, he was kneeling in front of Father Mammoth in the Council Room. The spent torch was on the floor beside the lamp, which was lit. Owl curled nearby, snoring noisily.

"It wasn't a dream," Thumb muttered and sat back on his heels. "Then what was it?" He picked up the lamp absently. Had he just talked to his soul, come back from the dead? Did that mean he had lost his own soul? He shook the thought from his head and wondered what he should do. Probably rouse Owl. Get him out of the cave. "What about it, old man?" Thumb said softly. "Are you going to catch fire again and say crazy things?

Owl snuffled. He slept with his mouth open so that Thumb could count the teeth he had lost. Thumb stretched his foot across the floor of the cave and gave Owl a nudge. "Owl." He gave Owl a second, firmer nudge. "Wake up." And then he slid back to watch what would happen.

Owl's mouth closed and then opened again "Am not," he said. His voice was thick.

"Owl!"

"What?" When he opened his eyes, it was clear that no spirit lurked behind them. They were the dim, watery eyes of an old man. "Who is that?"

"Thumb."

He thought for a moment and then nodded. "And the woman?"

"Bead is waiting outside."

He grunted as he propped himself up on an elbow. "I think she would follow me to the belly of the earth." He licked his lips. "If only to tell me I was wrong about something."

Thumb laughed politely. "What do you remember?"

"Remember? I came to the cave to find a guiding dream. Instead I got lost. Then I fell asleep."

"But no dream?"

He shook his head. "Not everyone finds dreams as easily as Thumb."

"Where did you fall asleep? Here? In the Lodge of the Mother Mammoth?"

"Thumb, it was dark." Owl sat up. "The mothers want the new storyteller, yes?"

"Yes."

"I thought so." He stretched and then yipped in pain. "I'm getting too old for a bed of stones." He kneaded the muscles of his back.

"I'm taking the lamp," said Thumb. "I left a fresh torch back at First Mammoth. I'll get it and then we should go."

Owl had gotten to his feet by the time Thumb returned. He steadied himself with a hand to the wall of the cave. "Bone," he said. In the torchlight, the old man's face was pale as the moon. "Bone will take my place."

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"We expect you to teach him all the stories you know."

"I have tried all these summers." Owl showed Thumb his teeth. "The son won't make anyone forget the father."

The two men stood at the mouth of the cave, blinking in the afternoon sun. Something was wrong. Thumb dropped the spent torch into the hearth. They were hungry and thirsty but there was no fire and the women were gone.

"Where is she?" Owl brushed past Thumb into the open air. "*Bead!*"

"Quiet." Thumb clamped his hand over Owl's mouth to keep him from calling out again. "Look at the coals. That fire didn't burn itself out. Somebody put it out. And I left a spear and a throwing stick."

"Why would they leave us?"

"Wait back in the cave. I'll see what I can find."

Thumb drew his knife and ran across the clearing in front of the cave to the cover of the forest. He moved silently through the trees, parallel to the trail but many paces away. After a while he gave the call of a nuthatch, a high two-note whistle repeated three times. The reply came from his left, a three-note whistle repeated twice. He found Onion and Bead waiting in a dry stream bed. They told him quickly what had happened. Part of Thumb was grateful to hear the dreadful story. It meant that he didn't have to think anymore about what had happened in the cave. He ran to fetch Owl. As they hurried back to the summer camp, the two women tried to remember everything they had heard. And when Thumb got home, he heard the story again, this time from Quick himself.

Quick's party had joined the hunters from the horse people and together they had tracked the reindeer herd. As was their custom, they split the herd and had driven part of it into the Killdeer, a steep-walled gorge blocked off with boulders and felled trees at one end. There they had slaughtered the reindeer. There was enough meat to get both peoples through the coming winter. Fresh skins to make clothes and blankets, antlers and bones for tools. It was a good harvest.

But while the hunters were butchering and skinning the reindeer, they were attacked. Bone thought they might have been spirits, but Quick was certain that they were just men. The attackers fought with "feather sticks"—short straight spears with a flint point at one end and feathers at the other. They threw these sticks from a distance and at great speed. They used a throwing stick unlike anything the hunters had seen before. Spears were useless against the attackers. When the hunters tried to charge them, they were turned back by a pack of fierce dogs.

Of the hunting party, Moon was killed and both Quick and Ash were wounded. The horse people had suffered greater losses. Another party of the strangers had sacked their summer camp and carried off some of the women. After they had escaped the Killdeer, Quick and his men had run for home. The attackers might be on their way to the valley of the people next. As they passed the long cave, Quick had seen the smoke of Onion's fire and had stopped to warn the women.

"I think these must be the people of the ice mountains," said Thumb as he ran his finger down the feather stick that Quick had brought back. "The shell people told me about the dogs." The point was stained with Quick's own blood. He had worked it out of his thigh after the attack.

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"You knew about these strangers?" said Blue.

"It was a story told by the sky people to the shell people," said Thumb, "who told it to me. I thought the truth of it might be a little thin."

People stared as if he had betrayed them. Thumb felt the blood rush to his face.

"In the story I heard," he said, "these people had four arms. Did they?"

"No," said Quick.

Bone spat. "Two were more than enough."

"And there was nothing about these." Thumb gave the feather stick back to Quick. "Or about anyone attacking anyone."

Owl held up his hand. "We should send a runner to the shell people to hear their story again," he said, "and to tell ours. Maybe he should visit the sky people too."

Everyone thought this was a good idea. Blue asked young Bright to start the next morning. Quick said that they should think about striking the summer camp early. The winter lodge, a day's walk upriver, was in a natural terrace that the people walled up with stones. It would be easier to defend. This idea caused a stir among the women. Flame held up her hand.

"The mothers have asked me to speak for them," she said. "We're still taking in the harvest. The winter camp is a long way from the best gathering places. That's why we make the summer camp here."

There was no answer to this argument and the men all knew it. They also knew what was coming next.

"There's plenty to harvest this summer," said Flame. "We can fill many skins with good things to eat—if we're here at the summer camp. But now Quick tells us that there will be no reindeer. We'll do our best, but unless there's meat, there will come a time this winter when we'll all go hungry."

Quick drew himself up. "The hunters will bring in meat enough for all." Normally, when Quick said something would be done, everyone stopped worrying about it. But dark blood soaked through the deerskin bandage around his thigh and he looked haggard. He had lost the winter's meat supply. A man was dead.

Oak raised his hand. "I am sure that the mothers can make some delicious rat stews and roasted squirrels, but there is bigger game to hunt. While Thumb was in the cave, I looked for his mammoth. It must like our valley, because I found it just last night. It's less than a day's walk away, on the dawn shore by the sandbar."

"But you can't." Thumb's voice was sharp. "I mean, maybe we should wait."

Everyone was watching him again. Even Onion seemed troubled by his outburst.

"You asked us to wait once already," said Blue carefully. "We did, because you are keeper of the caves. You went to the long cave and now you're back. What happened? Did you have a dream about the mammoth?"

"I. . . ." Thumb didn't know what to say, in part because he wasn't sure what had happened to him. "It wasn't a dream."

Owl raised his hand again. "He saved me, is what happened." The old man probably thought he was helping Thumb. Paying him back. "I was lost and he found me." He reached over to hug Thumb. "And now I know why. Let me tell you a story of long ago, before we were a people. A story about how my great-grandfather hunted mammoths."

* * *

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The strength of the people would be tested. Blue had sent a party of scouts to watch for the strangers at the far edges of the valley. That meant that the women would have to help with the hunt. Thumb had doubts about Owl's scheme, especially since Quick could take no part in it. The day after the council, a fever took him. He sprawled on his mat at the camp, senseless, sometimes thrashing in pain. His lover Cloud packed mustard leaves on his wound but it continued to ooze. Oak would take charge of the hunt.

In Owl's story, the old ones had hunted mammoths at night. The beasts were scared of fire, Owl claimed, and could easily be driven with torches. The surest kill would have been to chase the mammoth off a cliff. But the mammoth was finding good forage along the banks of the river. Oak saw the risk in trying to drive it all the way into the hills. Owl's story had the answer. They would dig a pit, force the mammoth into it and slaughter it while it struggled to get out.

Thumb had his own plan. He would stay as far away from the mammoth as he could. Let this story be about Oak, or one of the other men. If he didn't kill it, none of what had happened in the cave would matter.

Oak was calling for a fan of hunters to get the mammoth moving. Two lines of women were to move toward each other, closing its path off with their torches. They would force it into the pit, where the main party of hunters would be waiting to finish it. Thumb asked to be one of the hunters who walked the flanks to protect the women. Everyone thought that this was because he was worried about Onion.

Although she would not let anyone see it, he knew that she was distraught. The horse people were her first people. She had a mother, a sister, and cousins who she had kept up with, even after she had come to the valley. The two peoples traded and hunted together and they told each other's stories. Now her birth family might be hurt or dead or taken. There were dark circles under Onion's eyes and she rarely spoke unless spoken to.

It took three days to dig the pit. Owl said it must be covered with brush, or the prey would see its danger. Meanwhile a pair of hunters tracked the mammoth. When it strayed too far from the killing ground, they would show themselves and turn it back. By the night of the third day the trap was set. The people left camp just before dusk.

Thumb had strapped his two best spears and his throwing stick to his back. He offered to help Onion carry her three birch bark torches but she refused. Her eyes were wide and the line of her mouth was straight. She and the other women were jittery walking through the forest in the dark. Thumb didn't blame them. Everyone knew that luck turned at night, often for the bad. When the fat moon rose, everyone felt a little safer.

"Stop!"

Some of the women jumped. Even Thumb gave a yip of surprise. Oak came out of the darkness looking as if he had rolled around in the coals of a dead fire. His face was black and his deerskins filthy.

"This is where Thumb's group builds their fire. A small fire, yes?"

"We know this," said Thumb. "You've told us enough times."

"Then form your line running in that direction." Oak pointed. "Five and five paces apart. Don't light the torches until you get the call. Robin's group, come with me."

Thumb thought Oak must be unsure of himself. That was why he was treating everyone as if they were children.

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The women built the fire, thanking the first mother for the light of the world. Then Thumb helped them take their places. He put Onion farthest from the pit and waited with her.

"Are you afraid?" she said.

He was taken aback. Fear was not something men talked about, certainly not just before a hunt. "A little," he said. "Yes."

"Why have you closed yourself off from me?" She took his hand.

"Me? You're the silent one. Are you worried about your family?"

"You are my family, Thumb, and I *am* worried. Something happened in the cave. Something you haven't told me."

He felt his throat tighten. "I've tried not to think about it."

She waited for him to continue.

"It wasn't a dream. It wasn't." He sighed. "It was like we are speaking now, except I was talking to a spirit. A crazy spirit."

"Can spirits be crazy?"

"People can be crazy, so why can't spirits? I don't know. That's why I'm scared, Onion. Because I don't know what to think."

"So what did it say?"

He laughed. "That I am great."

"That wasn't crazy."

He leaned over to kiss her in the darkness. "That I will be father to many peoples," he said softly.

She shrank away from him momentarily, as if he had said something wrong. Then she closed her eyes and kissed him back.

They heard the call of a nuthatch, a high two-note whistle repeated three times. Thumb replied, a three-note whistle repeated twice.

"I'll come back," he said. He lit a torch from the fire and dashed down the line of women, lighting theirs. As he peered into the night, he could just make out the shimmer of the second line. Now Thumb could hear the chants of the fan of hunters driving the mammoth toward them. He threw his torch into the fire and fitted a spear into his throwing stick.

"*We are the people,*" the hunters cried, "*we need you, great one.*"

"Let's go," Thumb called, loud enough for everyone to hear, "Walk slowly toward the other lights."

The mammoth trumpeted. It was caught between the lines and headed toward the pit.

"It's working," Thumb called. "The mammoth will pass, then the hunters will be right behind. Close in after them."

"*We are the people.*"

Thumb saw a mammoth-sized shadow lope close by. It was breathing in great, ragged *chuffs*. He could almost taste its fear.

"*We need you, great one,*" called the hunters. Smaller shadows rippled through the trees.

"Follow them," he called. "Not too close."

The two lines of lights came together and Thumb saw Robin wave. Ahead of them the mammoth shrieked and the main group of hunters roared in triumph.

Thumb flew down the line to find Onion.

"Are you all right?" he said.

Her eyes shone in the torchlight. "We did it." She was excited.

Man.

The mammoth trumpeted again and Thumb heard a different note in the

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voices of the hunters. Later, he would learn that the pit wasn't wide enough. That the mammoth had skirted it without falling in. But that moment, all Thumb knew was that something was wrong.

A man screamed in agony. The shouts filled with fear. The luck of the people had turned.

"It's coming back," said Thumb. Hunting courage hammered through his body. "It can't get past Oak and the others but it can break through the chase group." He felt as if his legs were growing longer.

"But our torches," said Onion. "It's afraid of fire."

Man.

"Not if it's wounded." The muscles in his arms bunched and swelled. "It's probably crazy with fear." His hair rose straight from his head.

"Robin!" he called. "It's coming."

Robin pumped his spear to show he was ready.

"Thumb, what are you going to do?

You are.

"I can't die, Onion," said Thumb. "The spirit told me." He gulped air as if he were drowning. "Not until I'm old."

Then he saw it bearing down on him. On Onion. He realized that Owl had been right after all. It *was* a furry mountain, a mountain that galloped.

"Thumb!" cried Onion.

But she was behind him now. He took three effortless steps toward the mammoth. It was as if he were going down to the river for water. He couldn't die tonight. His old life was behind him too, what he had been before he had met himself in the long cave. The new Thumb had great things to do. *The last.* Oh, the stories they would tell about him! *But his soul would never.* The mammoth loomed. *Never.* He planted himself, drew back his throwing stick and screamed at it.

"I am!"

This is the story of Thumb the Great. He killed a mammoth with a single thrust of his spear. He gave his people the bow and arrow and taught them the ways of war. When the battle madness took him, there was no one so fierce. He led the people of the valley against the dog people and drove them back to the ice mountains. He lived a long life, fathered many children and mourned two lovers. The spirits treated him as if he were one of their own. One night they came and took him from the people. We believe he still watches over us.

He was a man filled with luck. ○

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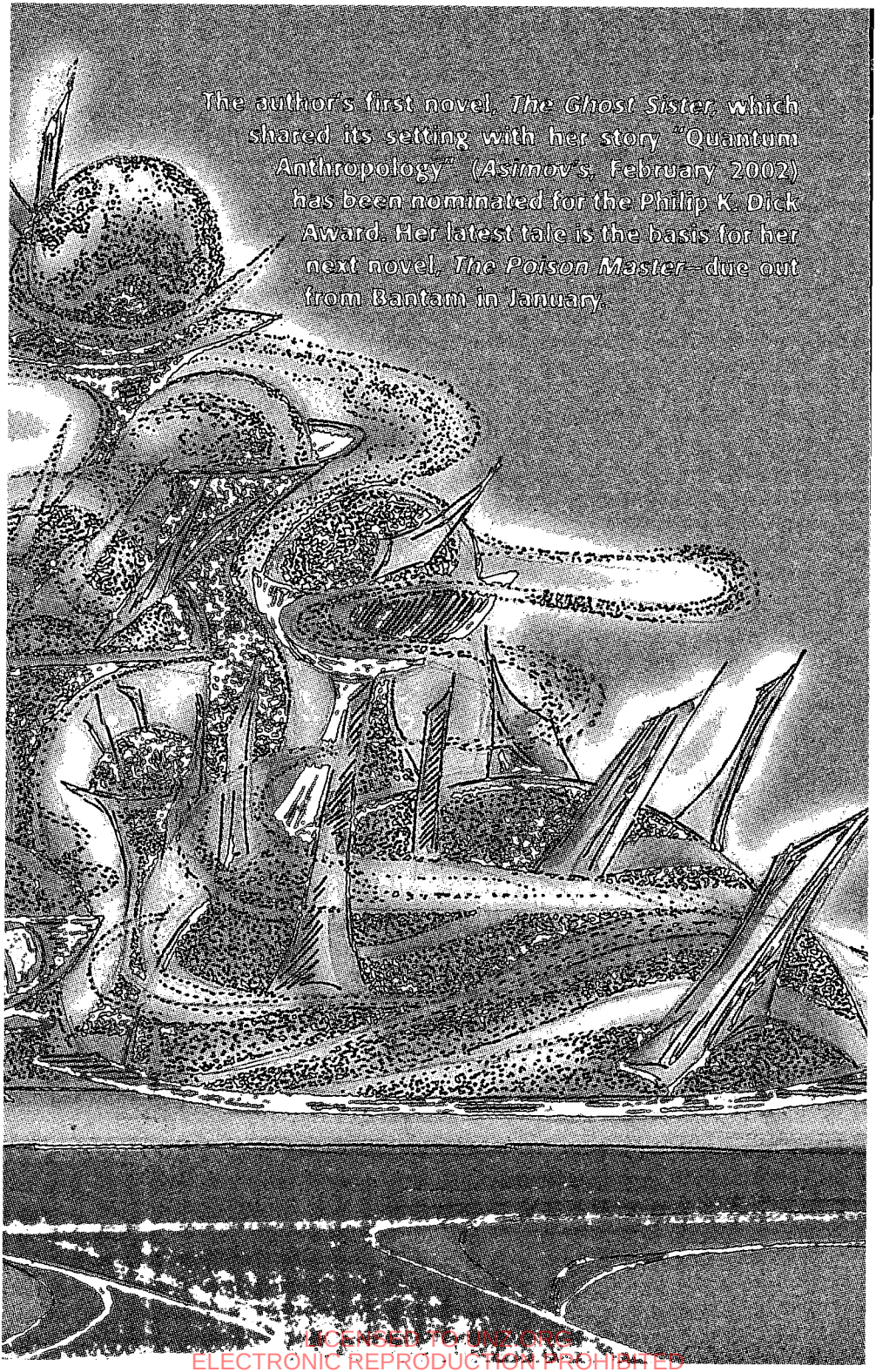

The author's first novel, *The Ghost Sister*, which shared its setting with her story "Quantum Anthropology" (*Asimov's*, February 2002) has been nominated for the Philip K. Dick Award. Her latest tale is the basis for her next novel, *The Poison Master*—due out from Bantam in January.

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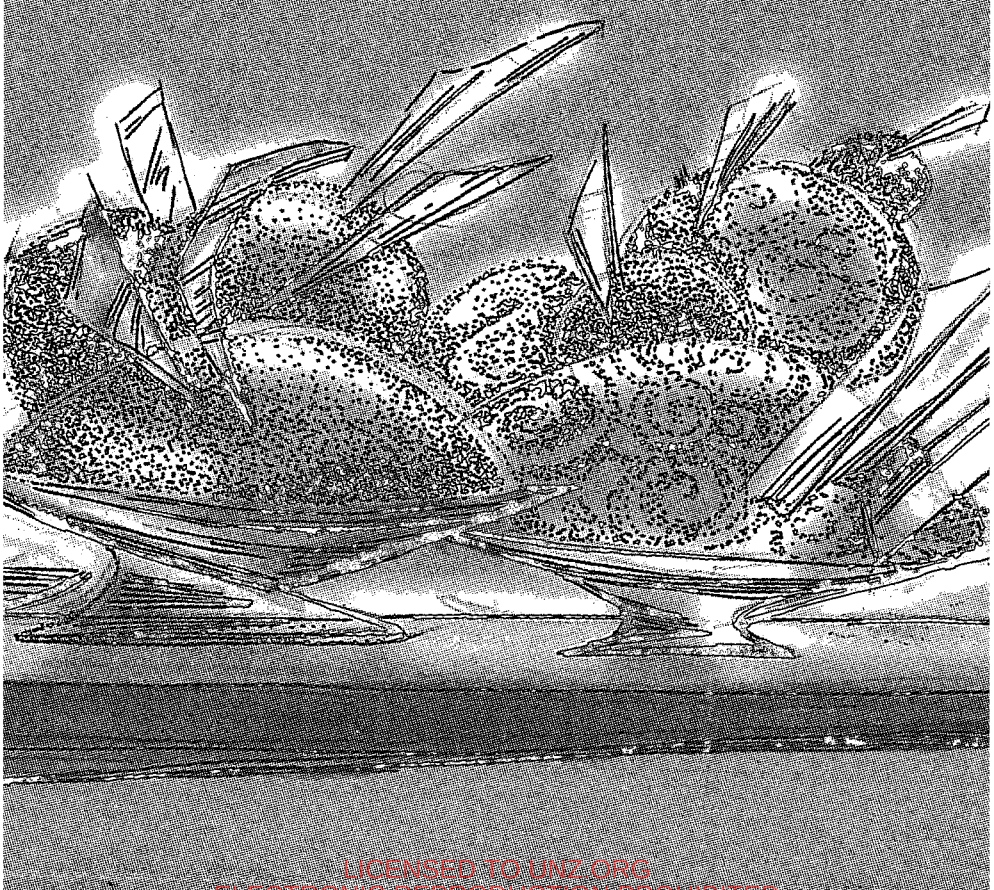
THE BANQUET OF THE LORDS OF NIGHT

Liz Williams

Illustration by June Levine



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Severin de Rais hurries through thistledown light, with the dangerous parcel clutched close to his heart, hoping that he won't turn a corner and come face to face with an Unpriest. He's already late, and the Isle de Saint Luce is forbidden territory. Yet even in the midst of his terror, de Rais still thinks it's a pity that he can't pause and marvel, for the Isle is, by old decree of the Lords of Night, the only place in all Paris where light is permitted at this hour. But de Rais cannot stop to admire the lamps; he's running out of time, and if an Unpriest should find what he is carrying . . . de Rais does not even dare think about it. A death sentence, surely. He glances with swift unease up at the shattered stump of Notre Dame, imagining it as it might have looked five hundred years before, filled with candles and prayers and light, before the Lords came and brought the darkness with them, conjuring the great shell that covers the world. The shell lies above the churning stormclouds, too high even to be seen, and de Rais drags his quivering attention back to the present. The metal cover of the precious, precarious parcel is sharp against his chest; the unspells that protect it burn his skin. He wonders in a delirious moment if it will rust if the rain touches it; rust and crumble into nothing more than red ash, like old blood.

The growing rain blurs the lamps of the Isle de Saint Luce so that they look like dandelion clocks, their down blown away on the wind. The light makes de Rais squint and peer, but the parcel warms his breast, in spite of the rain. Heat seeps through him like the taste of honey. The world spins briefly to summer, leaving raindrops scattered in the void. De Rais blinks at this first taste of a season he has never seen, and clasps the parcel even more tightly to his chest. Crossing the bridge that bisects the Seine and leads into the Rue Moins Pitie, de Rais pauses reeling for a moment to catch his unsteady breath. The Seine runs fast with rainswell: a mass of branches tumbles in the current, turning the water to bramble and briar. The risk that he is about to take makes de Rais wonder for a moment if it would be wiser simply to drop the parcel in the river and let the torrent carry it back to the sea, but then he turns away. Above de Rais' head, the curfew bell begins to chime out through the darkness, telling seven o'clock through the gloom. De Rais hurries on toward the Palais.

Behind him, the lights of the Isle are soon lost as he crosses onto the familiar territory of the right bank. De Rais makes his way through dark streets, following his path with meticulously counted steps: along the Quai, down the Tuileries, into the heart of the Lords' Quarter. Should he deviate from that path, he runs the risk of becoming lost in the maze of the city. Occasionally, he detects the faintest gleam of light upon the wet surface of a wall; neon in a blacked-out basement, a candle flickering in a secret room. And then his fears come true. Hastening around the corner into the Rue de Louvre, de Rais runs right into a group of Unpriests. Their long leather coats rustle against the pavement; their heads swivel from side to side. They are clicking like insects in a termite mound, and de Rais shrinks back against the wall, his heart hammering. But their gaze, concealed behind their black lenses, does not turn his way and in a moment they are gone. Why should they challenge him, after all? He's only a lowly pastry chef, and he's not on forbidden ground any more. He's entitled to be in this quarter, the honor signified by the ribbons on his coat. Breathing a long and tremulous sigh, de Rais continues on his way.

He reaches the kitchens of the Palais shortly afterward, and his lateness is rewarded by a bellow of rage from the head chef. Mumbling insults and excuses beneath his breath, de Rais sidles through the outskirts of the

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kitchens to collect his work clothes from the store. He fastens the midnight jacket around himself and adjusts the tall smoke-colored hat in the dim reflection of the mirror. His pinched, pale face seems a picture of guilt, but the parcel remains for now in the pocket of his overcoat. De Rais plans to remove it surreptitiously when things quieten down, and hide it at the bottom of the little bread oven in his own small domain. Stepping around the corner of the table, he picks up the chopping board and begins work.

De Rais is a methodical pastry chef, who believes in preparation and planning. The ingredients for today's desserts and pastries have been assembled the night before; the last chores performed by de Rais before he made his weary way homeward. On an ordinary day, tonight and tomorrow would follow the same pattern: home to the attic room in the old Latin Quarter; a few hours' snatched sleep, broken by the sounds from the dingy café downstairs, then back to the Palais early in the morning, with perhaps a stolen hour toward twilight when de Rais can go to the library or snatch a pastis in one of the dreary licensed cafes. But today, things changed. Today, de Rais went to meet the girl: the terrorist, the rebel, the one who gave him the parcel, and perhaps because of that tomorrow will be different too, de Rais thinks with a sudden uplift of his spirits that must surely be noticeable clear across the kitchen. He starts guiltily, and thinks careful, neutral thoughts, but it's not easy to see the expressions on the faces of those who inhabit the kitchens. The head chef jealously guards the ration of candles; everyone else must work in the cold glow of the ovens or simply by touch. It isn't as though they haven't had practice, after all.

Opening the refrigerator, de Rais takes out a container and places it on the table. He opens it carefully, not wanting the essence to escape. The container is full of ice: glassy dark ice from the seas near the southern pole, a place that de Rais knows only from legend. It seems to hold its own glow: it's almost green, like the stories the old folk tell about dawn. With a sharp scalpel, de Rais touches the edge of the sheet of ice, so that it splits and cracks into a nest of slivers. De Rais arranges the shards of ice in the center of each of the twenty-seven sorbet dishes, then reaches back inside the refrigerator for the ingredients of the sauce. He plans a complex, subtle accompaniment to the simple ice: a touch of fragrant Indonesian darkness, gathered close to midnight, redolent of cinnamon and incense and spiced smoke. Placing the darkness in a bowl, he adds a pinch of flavors: twilight from Japan, warm and clouded, with a hint of star anise. Then a touch of evening from the Sinang Delta, water-clear and cool. De Rais stirs all of these elements nine times with an ebony spoon, then pours the swirl of darkness into a silver pan and lights the chilly flame beneath it. He waits, frowning, as a drift of smoke begins to rise from the sauce and then he casts it in a spiral around the little columns of ice and claps his hands imperiously for the serving staff to take it into the dining hall, where the Lords of Night are waiting. The head chef looks up, once, as the procession passes by, and gives a single grudging nod of approval.

Having dispensed with the appetizers, the responsibility for the meal passes on to the head chef for a time, while de Rais busies himself with the desserts. He hopes to get the chance to take the parcel from his overcoat pocket and slip it into the oven, but the head chef has got the apprentices out of his fevered way by sending them over to work in de Rais's corner, a not-uncommon occurrence. Frustrated, de Rais gets on with his own tasks. He prepares fondants of gloom, sorbets of shadows, and sherbets of dusk; each one gathered from the far and unseen corners of the Earth. Then de

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Rais wipes his weary hands on his apron and steps back to admire his handiwork. Behind him, the booming voice of the head chef says,

"Not bad. Perhaps there's some promise in you after all."

De Rais jumps like a tortured hare. Turning, he snaps, "Don't do that! You startled me."

"Why?" The head chef thrusts his cadaverous face close to that of de Rais. "Nervous? Been doing something you shouldn't? Been gobbing in the fondants again?"

De Rais bridles; he'd never dream of doing such a thing and the head chef knows it.

"Get over there, boy, when you've finished. I want some help to scrub the floors."

The head chef's head jerks in the direction of the apprentices and they scramble after him as he ambles back toward the cold crimson glow of his own territory. Heart pounding, de Rais sidles into the store, retrieves the parcel at last and slides it underneath the iron floor of the little oven. The package is still warm. It seems to radiate its own heat, and de Rais is relieved when at last it's safely out of sight. Then, he goes to where the head chef is waiting and begins to rinse the stone floor clean of blood. He keeps thinking about the package lying in the oven. Once more he rehearses the plan that has been steeping in his mind ever since the girl gave him the parcel.

Once the kitchens are quiet, and everyone has left for the night, de Rais will take the package out of the oven. And then, he will begin to cook. He'll prepare a special dish for the next banquet of the Lords of Night, which will take place tomorrow, on a day that was once called Midsummer. De Rais thinks of the eternal, plunging rain, which he fancies he can hear beating on the pavements above the dungeons of the kitchen, and he shivers as he swabs the bloodstained floor. Mechanically, he goes over the plan once more in his mind, but in the next few minutes, he realizes it might be too late to even think about executing it. The Unpriests have arrived.

They slither down the kitchen stairs, boot-heels clicking on the expensive tiles. De Rais risks a glance, and the nape of his neck grows cold. The people in this group are no ordinary Unpriests. Their long coats bear the Lords' own insignia, and there is a woman with them, dressed in black velvet riding breeches and a leather cuirass. A single dark pearl dangles from one ear, like a bead of jet. Her eyes are hidden behind thick dark lenses. Her head swivels from side to side. This is the closest that de Rais has ever been to one of the creatures of the Lords of Night, and she makes him feel hollow and numb. He stares grimly down at the high, polished heels of her boots. The language that she speaks is archaic, formal, and barely intelligible; she enunciates slowly, evidently for the benefit of the head chef who, as a mere servant, might not be expected to understand her.

"The Unchurch has had word that an attempt is to be made on the lives of the Lords of Night, by non-persons, by dream-sellers, by ghosts. The servants must submit to be searched."

"An attempt on. . . ?" The head chef's thin face quivers in shock. "By whom?"

"I told you. Non-persons. Those who deny darkness, who seek That which is Not."

"By what means?"

"Unknown," the Unpriest says, stiffly, then concedes "By myself, at least. The Lords, of course, know all, but in their black wisdom they have not di-

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vulged the answer to one as lowly as myself and were I to know that answer, I would be no more likely to divulge it to *you*. Now. Prepare to be searched."

From beneath the folds of her coat, she takes a device that de Rais has never seen before. It consists of an extending tube, at the end of which is a round, glistening lens. The woman raises it to the level of the head chef's face, and passes it down his body, from the crown of his head to his toes. Fascinated, de Rais nonetheless stares straight ahead, afraid of attracting undue attention, but he glimpses from the corner of his eye the chef's cadaverous form, surrounded for a moment by black energy; an aura of unlight. One by one, the woman passes the device along the rows of apprentices: darkness crackles and snaps. At last she reaches de Rais. She stares at him for a moment, and, swallowing, he raises his gaze to hers but sees nothing. Her eyes are entirely concealed behind the thick obsidian lenses.

She says, caressingly, "You look alarmed, boy. Are you afraid?"

De Rais says what is no more than the truth. "Yes. I am afraid. I have been afraid ever since I can remember."

A thin charcoal brow arches above the lenses. The woman says, "Indeed? Of what?"

Boldly, de Rais answers, "Of not matching the expectations of the Lords of Night. Of not meeting the standards that I myself set to serve them."

"You talk like an artist," the woman says, brows still raised.

"I *am* an artist, madam," de Rais says, with the bravery of absolute fear. "I am an artist of culinary color and its absence, a master of texture and shade, of monochrome uniformity. I drain the delicacies that I prepare of the touch of light and fire and brightness that is bestowed upon them by the flames on which they are conjured into being, so that the palates of the Lords of Night may not be seared for one moment by the tiniest spark of light."

To de Rais's infinite surprise, the head chef turns his head and says, "It's true, my lady. The food that this man prepares is a paradigm of unlight. His concoctions are as dark and smooth and rich as the galaxy's core itself." His glance catches that of de Rais: *I don't like you. But you're still one of us.*

The woman bows her head in mocking acknowledgement. "Well, then, I am honored. But you must still be scrutinized."

She raises the device once more and the lens rotates along its appointed track. The woman puts her head on one side, studies him. "You absorb light, you say? You purify the foods of darkness?"

"I do."

Something long and thin whips from the tube that holds the lens and lashes de Rais across the face. The impact spins him around and he sprawls backward, stunned. The Unpriest says, "It shows. There are cracks and flickers along the edges of your soul. It is dangerous work that you do, M'sieu. . . ?"

"My name is de Rais," he says, through bleeding teeth.

"M'sieu de Rais. I had not thought that the life of a pastry chef would be so fraught with hazard. Take care that you visit the Unpriests more regularly, to purge your soul of traces of light as effectively as you purify the foods that you prepare." She turns away. The rest of the kitchen is searched methodically, and de Rais's heart skips and hops as an investigation is made of his work area, including the little stove. The Unpriest lingers as she examines the pastries and sorbets, and de Rais hides a bruised smile as he sees her stealthy fingers creep out and flick a piece of brittle icing to her mouth. But the metal binding of the package remains secure, hidden beneath the iron floor of the little oven and guarded with unspells. The woman heads for the stairs with

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an angry flounce and de Rais inclines his head until the beetle-click of her boot-heels betrays her absence. No-one says a word after that, except the head chef, who turns to de Rais and says brusquely, "You. Have you finished?"

"The floor is clean. I have my preparations to complete for tomorrow."

"Go and do it, then."

One by one, the apprentices leave the kitchen. De Rais hovers over his tasks, lingering on slicing and molding and freezing, until the head chef snaps a curt good night, along with instructions to lock up. De Rais listens as the chef's heavy footsteps pound up the stairs and the door slams behind him, then he runs to the stove and takes out the package. It's so hot that it burns even de Rais's callused hands. Cursing beneath his breath, he drops the package on the table and flicks open the complex locks until the inside of the package is revealed. He stares for a moment. The girl who gave the package to de Rais has told him: *you will see nothing. Do not expect to be witness to miracle. It is latent, nothing more. But you will be able to touch it.* Cautiously, de Rais reaches inside the hot metal binding and feels something smooth and soft and warm. He lifts it from the binding, and to his surprise it comes away easily. He feels it glide across the table and has to put out a hand to stop it from falling onto the floor. Then, working quickly in case it dissipates, de Rais takes his sharp knife and begins to chop, his hand moving faster and faster with a chef's practiced speed until the contents of the package are in tiny pieces. And then de Rais begins his final great work; the last work that, if all goes well, he will ever perform in the palace of the Lords of Night. He begins to sculpt the substance into sugars and candies, into creams and shadows. At last he passes his hand over the surface of the chopping block and finds only a minute sliver, like a splinter of glass. De Rais is sorely tempted to pop it in his mouth, but he resists the temptation and drifts it onto the curling pinnacle of a sugar tower instead. And then he slips everything into the darkest, coldest recesses of the refrigerator, to wait there till morning. As he turns to leave, he fancies that when he next opens the door of the refrigerator, it will have begun to glow.

Early next morning, before the waking bells toll out across the city, de Rais rises from a troubled night, bundles himself into his clothes and hurries back to the Palais. The rain has stopped, but a thin wind rips down the Tuileries, snatching at de Rais's untidy hair. He does not think he slept, and yet his head is filled with dreams that defy the darkening day; dreams of something that flickers golden down the rainy air. When de Rais reaches the Palais, the head chef greets him with a grunt and a tilt of the head, their yesterday truce still fragile as spider silk.

Quietly, unobtrusively, de Rais slides into his chef's jacket. He takes a deep, shaky breath and opens the refrigerator. It is still and dim within, and undisturbed. De Rais relaxes a little, and his breath mists cold metal. He rests his hands on the top of the refrigerator for a moment, to steady them. Then, he goes about the remaining preparations for this evening's banquet; the less critical, less dangerous things, a frenzy of slicing and molding for the hundred guests of the Lords of Night.

When evening comes, everything is ready. De Rais stands back and exchanges triumphant glances with the head chef, whose face is blue with cold. De Rais dispatches perfumed bowls of dusk to the dining hall, and joins the apprentices for a surreptitious glimpse of the guests as they arrive. His hands are trembling again. He watches as something glides through the great double doors at the end of the vast hall. It stands seven feet high and its armored head drifts from side to side. Its mandibles exude a faint and

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musty fragrance. Huge smooth claws rustle beneath its midnight robes. It moves with ponderous, swinging slowness down the hall, and in its wake the air seems suddenly thin and darker, as though it breathes in health and light, and gives out nothing. Another follows through the double doors: female, this time. De Rais catches sight of the long out-thrust jaw and the slotted vertebrae of her throat beneath her hood. She places a delicately jointed foot on the thick carpet and teeters forward. De Rais melts back into the shadows. Three hours to go, before the clock strikes midnight.

Downstairs again, and silent in his corner of the kitchen, de Rais watches as the dishes of the main course are carried upstairs. The head chef has excelled himself. The foods he has prepared are rarefied to their finest extreme: all blood and essence. De Rais does not like to think where such food has come from, but he doubts that it has been produced by the meat racks at the edges of the city. Wild things, he thinks, reared in the deep growth of the forests that surround Paris, hunted down. The clock ticks on. The seemingly endless parade of dishes is borne from view. At last it is time for dessert.

De Rais hovers anxiously as the sorbets, each one with its cool, deceptive pool of night around the incarnadined ice, are taken upstairs by the serving staff. Then, still in his dark jacket, he waits for a frozen moment until he is certain that the attention of the head chef is elsewhere, and slips after the serving staff. Apart from a pair of servitors at the far end of the hallway, their glacial gaze fixed on the great bronze doors, the hallway is empty. De Rais hastens to the dining hall, his footsteps muffled by the carpet. He puts his eye to the crack of the dining room door. He knows the risk, he thinks, but he still has to see.

Inside, it is almost dark. A faint phosphorescence illuminates the high, echoing vaults of the hall. Beneath, the shadowy presences of the Lords of Night dine on the last of the meat essences. There is a susurrus of anticipation as the desserts are passed around the hall by the silent serving staff, who then troop from the hall. De Rais, his hearing fine-tuned by anticipation, hears the tiny crack as the first silver spoon touches the first sorbet, and the minute crunch of mandibles upon ice. De Rais takes a single breath. Followed by the rest of its companions, the Lord swallows a single spoonful of captured evening. And explodes.

Latent light, ingested by perfect darkness, electrifies every filament of the Lord's body before it flares up into a great column of brilliance. De Rais, thrown back against the wall, can see nothing but the shattered form of the Lord branded upon his retinas, but he can taste the light that streams out from the dining hall: the hard, clear sunlight of mountain peaks; the roseate depths of sundown over ocean; the golden, glittering brightness of the sun at midsummer noon. It has worked. The Lords are gone in a moment of fire, consumed in the forbidden, latent light so carefully concealed in darkness and ice by the skillful hands of Severin de Rais. And in the eye of his mind de Rais sees that light pouring up from the heart of the banqueting hall, gilding every wall in Paris and running liquid into the river, distributing itself in immaculate proportion until the shell of shadow that covers the world is broken and the hidden sun revealed. Darkness and light, night and day, in balance once again, for everyone.

Except de Rais. For he knows, as soon as that first blaze of magnificence has passed, that the light has been too much for his shadow-born eyes. Once the flashing echoes have faded from the ruin of his sight, there is only night once more: familiar, relentless, and cold. But as de Rais turns to grope his way along the hallway, he is smiling, for in his imagination and his heart and his soul there is nothing but the sun. ○

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TAKING THE PISS

Brian Stableford

Brian Stableford recently delivered the final volume in his future history series from Tor, which consists of *Inherit the Earth* (1998), *Architects of Emortality* (1999), *The Fountains of Youth* (2000), *The Cassandra Complex* (2001), *Dark Ararat* (2002) and *The Omega Expedition* (forthcoming in 2003). Other recent novels include the apocalyptic comedy *Year Zero* (2000) and the fantasy novel *The Eleventh Hour* (2001). Mr. Stableford recently completed *The Vampire of Paris*, a translation of *La Vampire* by Paul Feval as well. The book should come out from Sarob Press in 2003.

Modern town centers are supposed to be very safe places. There are CCTV cameras everywhere, in the street as well as in the shops, all of them feeding video tapes that can be requisitioned by the police as soon as a crime is reported. Unfortunately, the promise of safety draws people to the High Street like a magnet, in such numbers that mere population density becomes a cloak sheltering all manner of clandestine skullduggery. Which was how I came to be kidnapped in broad daylight, at two o'clock on a Saturday afternoon, as I came out of Sainsbury's clutching two bags of assorted foodstuffs.

If I'd had any warning, I might have been able to figure out how to handle the situation, but who could possibly expect a dumpy and lumpy peroxide blonde with a Primark raincoat draped over her right arm to snuggle up to a well-built lad beside the trolley-rack and stick an automatic pistol under his ribs? It's not the kind of situation you rehearse in idle moments, even if you have been warned that you might be a target for industrial espionage.

"Make for the parking lot, Darren," she whispered. "Nice and easy." The woman looked almost as old and homely as my mum, but the gun-barrel digging into my solar plexus seemed to me to be more a wicked-stepmother kind of thing.

"You have *got* to be joking," I said, more stupidly than courageously.

"On the contrary," she retorted. "If I weren't extremely serious, I wouldn't be taking the risk."

I started walking toward the parking lot, nice and easy. It was partly the shock. I couldn't quite get my head together, and when your thinking engine stalls, you tend to follow ready-made scripts. I'd never been kidnapped before, but I'd seen lots of movies and my legs knew exactly how scenes of that sort were supposed to go. On top of that, it was exciting. People talk about going numb with shock, as if that were the usual effect, but I didn't. Once my thinking engine had restarted after the momentary stall, it told me that this was the most exciting thing that had ever happened to me. In my twen-

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ty years of life I'd never been able to think of myself as the kind of person who might get kidnapped, and actually *being* kidnapped had to be perceived as a compliment. It was like a promotion: I felt that I'd leapt a good few thousand places in the pecking order of human society.

Parking lots are lousy with CC-TV cameras, so I wasn't particularly astonished when a white Transit slid past the EXIT barrier as we approached and slowed almost to a halt as we neared it. The side door opened as it eased past us, and the blonde reached out with her free hand to force my head down before using the concealed gun to shove me forward. Two hands reached out from the dark interior to haul me into the back of the van, without the least care for elegance or comfort. The woman slammed the door behind me. I presume she walked on, a picture of innocence, as if she hadn't a care in the world.

By the time I'd sorted myself out and got myself into a sitting position on the hardboard-covered floor, I'd taken due note of the fact that the hands belonged to a stout man wearing a Honey Monster party-mask. His ears stuck out from the sides, though, and the way they'd been flattened suggested to me that the guy had probably gone more than a few rounds in a boxing ring, maybe one of the unlicensed kind where the fighters don't wear gloves. I'm no weed, but I figured that he probably didn't need a gun to keep me in line.

I was tempted to tell him that he must have got the wrong Darren, but I knew I wouldn't like hearing the obvious reply.

"You could have tried bribery," I said, instead. "Kidnapping's not nice."

"I don't *do* nice," the masked pugilist informed me. "But don't wet yourself yet—there'll be time for that later."

The back of the driver's head was stubbornly uninformative, and from where I was sitting, I couldn't see his face in the mirror. So far as I could tell, though, his was also the head of a man who didn't do nice. The van was still crawling through the heavy traffic, and I figured it would take us at least fifteen minutes to get out of town. We were headed north.

"Where are we going?" I asked.

The only answer I got was painstakingly measured out in duct tape, with which the Honey Monster sealed my wrists and mouth as well as my eyes. I wasn't surprised. I guessed that the conversational skills of bare-knuckle fighters were probably a bit limited, and that he was more deeply embarrassed by the fact than he cared to admit.

My head was relatively unscrambled by then, so I was able to wonder whether the dumpy blonde would actually have shot me if I'd screamed blue murder and yelled "Look out, she's got a gun!"?—assuming, that is, that the gun was real.

Maybe not, I decided, but I'd probably have been trampled to death in the shoppers' stampede. It was only a fortnight since some prion-perverted maniac had gunned down thirty-five outside a McDonald's in one of the sidestreets off Shaftesbury Avenue.

As soon as the Honey Monster's busy hands were withdrawn, I began to feel a growing need to take a piss, but that was only natural.

Ten years ago, I reflected, kidnapping had been the prerogative of optimistic ransom-seekers and desperate estranged fathers, but the twenty-first century had arrived. Nowadays, busty women might be kidnapped for their milk, marrow-fat men for their blood, and job-creation fodder of either sex for their urine.

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It's a crazy world, I remember thinking—I'd have said it out loud if I could—*but it's the one we all have to live in.*

When I'd committed myself to the job at GSKC—under threat of having my benefit cut to nothing at all if I didn't—the long list of do's and don'ts had taken me by surprise. I hadn't had a chance to think it through properly. Getting paid for pissing had seemed like a pretty slick idea, given that it was something I had to do anyway, but I hadn't reckoned on the measures I'd have to take to ensure that my piss measured up to the expected standard of purity.

"No alcohol," the young man in the white coat had insisted, while he was fiddling with something that looked like a cross between a hypodermic syringe and a dustbuster. "No drugs, not even prescription medicines. No shellfish." Then he got really serious, although you wouldn't have known it from his smirk. "You have to wear the kit at *all* times. From now on, everything that comes out goes into our bottles."

"Hang on," I said, way too late. "You can't mean *everything.* You're only supposed to be mucking about with the piss."

"It's only for a month, in the first instance," the white-coat reminded me, mockingly. "If we renew your contract after that you get time off in between experimental runs."

"A month!" I said. "That's not . . ."

"Darren," he said, in that infuriating you-can't-bullshit-me-I'm-a-doctor way that the clever bastards learn in their first term at medical school. "Have you even *got* a girlfriend?"

He *knew* that wasn't the point, but he also knew that the conversation was on the brink of becoming *extremely* embarrassing, and not for him.

I'd been suckered, of course. He knew that I hadn't really listened to the interminable lecture I'd had to sit through before I signed on the dotted line. My eyes had glazed over as soon as the bastard had launched into his spiel about "the many advantages of the human bladder as a bioreactor." The science had all been double dutch, the instructions all humiliation, and as for what they had done with the dustbuster-cum-syringe . . . well, let's just say that I'd begun to have second thoughts about the whole bloody thing long before they told me to go home.

And now, to add injury to insult, I was being kidnapped.

Somehow, the man with the magic syringe had failed to include that in his list of don'ts. If he *had* included the possibility in his presentation he'd probably have fed me a line of bullshit about trying to keep track of the turns the van made, and listening out for any tell-tale sounds, like trains going over bridges and street-markets and church clocks, but I didn't bother with any of that. As far as I was concerned, if the kidnappers wanted to steal a bucketful of my piss they were more than welcome, and if GSKC plc didn't like it, they ought to have been more careful with that fucking dustbuster.

Mercifully, the man who didn't do nice didn't start to fiddle with my apparatus while we were still in the van. I couldn't have stood that. It was bad enough having to walk around all day with a tube and a glorified hot-water bottle attached to my inside leg and a double-duty condom hermetically sealed to my prick, and I'd had my fill of embarrassment the day before, when I'd handed over my first set of sample bottles to GSKC's collection service. Having some pervert do a removal job in the back of a white van would

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definitely have added yet more insult to the injury that had already been added to the first insult.

I tried to lie back against the side-panel of the van and think of England, but it wasn't the kind of situation that was conducive to a shrewd analysis of our chances in the upcoming World Cup. I concentrated on telling myself that once the kidnappers had gotten what they wanted, they'd have no further use for me and they'd turn me loose again. I even started rehearsing the statement I'd have to give to the police. No, officer, I wouldn't recognize the woman again, officer—all fat middle-aged peroxide blondes look alike to me. No, I didn't get the index number of the van and I didn't see any distinguishing marks inside or out.

The need to piss got steadily worse, but I wanted to hold on, for propriety's sake. It did occur to me that if I went there and then they *might* just take the bottle and let me go, without even bothering to take me all the way to their destination, but that wasn't what the plug-ugly had implied when he'd advised me to hang on.

I wondered what he'd done with the shopping bags. I had to hope that they'd let me have them all back when the deal was done—but even if they did, Mum wouldn't be pleased if anything was broken, or even slightly bruised. As if in answer to my unspoken question, I heard my captor say: "Naughty, naughty. You're not supposed to be drinking alcohol." He'd obviously found Mum's bottle of Hungarian pinot noir.

I heard the sound of a cork being withdrawn.

Somehow, the idea of a kidnapper carrying a corkscrew was deeply unreassuring. I couldn't believe that he'd been carrying it on the off-chance that I had a bottle of wine in my shopping bag when his ugly girlfriend had intercepted me.

If it hadn't been for the duct tape, I'd have told the presumably unmasked Honey Monster that the pinot noir wasn't for me, and that Mum would have his guts for garters if she ever found out who'd deprived her of her Sunday treat, but as things were, I had no alternative but to let the ex-pugilist believe that I was the kind of person who didn't take obligatory employment contracts too seriously.

Maybe, I thought, that was the kind of person I really should have been, given that piss-artists are right at the bottom of the totem-pole in the bioreactor hierarchy. I'd always thought that was completely unfair. I suppose one can understand the social status that attaches to pretty girls with loaded tits, but why blood donors should be reckoned a cut above the rest of us is beyond me. Where's the virtue in being vampires' prey?

"This stuff is *disgusting*," the man who didn't do nice informed me, effortlessly living up to his self-confessed reputation. "It's been dosed with washing soda to neutralize excess acid, then sugared to cover up the residual soapiness. There's no excuse, you know, with Calais just the other side of the tunnel and a resident smuggler on every housing estate from Dover to Coventry. It's not as if we're living in fucking Northumberland."

He was displaying his age and his origins as well as his ignorance. I might have failed geography GCSE, but even I knew that there was no such county as Northumberland any more, and hadn't been in my lifetime. Years of exile had weakened his accent, but I guessed that he had probably been born somewhere not a million miles from Carlisle. Anyway, Mum liked her wine sweet as well as fruity. She wouldn't have thanked me for a classy claret.

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The van rolled to a final halt then, and I heard the driver get out. It must have been the driver who opened the side door, although it was the wine connoisseur who seized me by the scruff of the neck and thrust me out into the open again. Wherever we were, there couldn't have been many CC-TV cameras around. I couldn't tell whose hand it was that grabbed my arm and steered me along a pavement and down a flight of steps, then along a corridor, and up a second staircase, through God only knows how many doorways. In the end, though, I felt the pile of a decent carpet under my running shoes before I was thrust into a perfectly serviceable armchair.

The strip of tape that had sealed my mouth was removed with an abruptness that left me wishing I'd shaved a little more carefully that morning, but the strips sealing my eyes and securing my wrists were left untouched.

"Sorry about the precautions, Darren," said a male voice I hadn't heard before, "but it's for your own good. You really don't want to know too much about us." I guessed that this man too was from up north, though not nearly so far north as the one who didn't do nice. Derby maybe, or Nottingham: what real northerners would call the Midlands.

"I can go any time you want me to," I told him, meaning *go* rather than literally go. "Just take the bottle and drop me off—anywhere you want, although somewhere near home would be nice."

"It's not that simple, I'm afraid," said the Midlander. "We'll need a more generous sample than you can provide just like that."

"Oh shit," I murmured. It's amazing how half a dozen marathon water-drinking sessions can put you right off the idea of thirst. "How long are you going to keep me here?"

"A few hours. You'll be home in time for dinner. We'll put the pizzas and the other perishables in the fridge for you. Sorry about the wine—but you really aren't supposed to be drinking."

"It's for my Mum," I told him, exasperatedly. "You'd better be telling the truth. Mum'll report me missing if I don't turn up by six—that's when the supermarket shuts."

"No problem, Darren," the voice said, softly. "We'll need to do a few little tests—but we won't hurt you. I promise."

There was something in that seemingly insincere promise that immediately made me think of dustbusters and catheters. "Aw, come *on,*" I said, finally giving way to pent-up terror. "I'm nothing special. Just one more conscript in Willie's barmy army, doing my bit for king and country. I don't know what I'm pissing, apart from the fact that it's pink, but I'm absolutely bloody certain that it can't be worth much, or the boys at GSKC plc wouldn't be letting me roam the streets and do Mum's shopping in Sainsbury's."

"You might be right," was the amiable reply. "But it might just be GSKC that have miscalculated. Our employers' hackers think so, at any rate—and when the hackers say *frog,* we all jump. Way of the world, old son. You'll just have to be patient for a few hours. You can manage that, can't you? I can put the radio on for you, if you like, or a CD. How about a little bit of Vivaldi? Wagner might be a little too stimulating,"

I knew that he was mocking me, but it didn't seem to matter.

"Vivaldi will be fine," I said, with as much dignity as I could muster. "A pot of coffee would be nice, if I've got to do a lot of drinking. Cream, no sugar. A few bourbon biscuits wouldn't come amiss."

"It's not the Ritz, Darren," he told me—and I could tell from the direction of his voice that he'd got up and was moving toward the door— "but I guess

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we can stretch to tea if you'd rather have that than water. Lots and lots of lovely tea."

Personally, I'd always thought that tea was for chimpanzees, but I was right off water, especially the kind that came from the tap. Tea was probably the best offer I was going to get.

"Tea's okay," I assured him, trying to put a brave face on things.

"But there's one more thing we need to take care of first," he said, in a way that told me loud and clear that I wasn't going to like it one little bit.

"What?" I said, although I'd already guessed.

When I'd handed in the first batch of samples, GSKC's delivery-boy had been careful not to make any comments, but I hadn't been able to stop myself imagining what he must be thinking. If you're a sperm-donor, so rumor has it, they just give you a Dutch magazine and a plastic cup and leave you to it, but it's not as easy as that when your eyes and hands are taped up. I told them that I wouldn't try anything, but they weren't taking any chances.

"Think of it as phone sex," the Vivaldi fan said, as he left me in the capable hands of his female accomplice—but I'd never gone in for phone sex and even in phone sex you get to use your own hand. It didn't help matters that I had to assume that she was the same woman who'd stuck a gun in my ribs: fat, fifty-five, and fake blonde.

After that, drinking tea by the quart so that I could piss like a champion didn't seem as much like torture as it might have. The long wait thereafter was positively relaxing, and not because of bloody Vivaldi tinkling away in the background.

I was really looking forward to another ride in the back of the van, even though my arms were aching like crazy, when I heard the mobile phone playing the old *Lone Ranger* theme-tune. It was the Midland accent that exclaimed: "What? You have *got* to be joking." I knew something must have gone wrong, and I spent a couple of minutes wallowing in terror while my captor listened to the rest of the bad news.

Mercifully, it turned out that he wasn't being instructed to bump me off.

"I'm sorry, Darren," the Midlander informed me—and he really did sound regretful—"but there's been a bit of a hitch. We may need to hang on to you a little longer."

"What kind of hitch?" I wanted to know.

"You were right and we were wrong, Darren. We should have tried bribery. We were trying to save on expenses. Is it too late to start over, do you think?"

It was an interesting idea. I knew I ought to tell him to go fuck himself, if only for appearances' sake, but I hadn't quite got over the complimentary implications of being a kidnap victim. This new departure seemed like another promotion, a chance to skip another few thousand rungs of the status ladder.

"How big a bribe did you have in mind?" I said, trying with all my might to sound like a man who was accustomed to being on the ball. "I mean, given the inconvenience, not to mention the insult . . . and this is a multimillion-euro business, after all."

"Don't push it, Darren," he said. "We all have to make a profit on the deal, and we know exactly what GSKC were paying you. It wasn't enough, even before . . . but we have our choices to make too. We *could* put you up for auc-

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tion. That's what the Honey Monster wants to do—but I'm not like him. I *can* do nice, if it seems worthwhile. How would you like to work for us?"

"As a piss-artist?" I said, wearily.

"As a spy. You were right, you see, when you said that if you were making anything valuable GSKC wouldn't have turned you loose on to the streets—but our employers' hackers were right when they said that GSKC might have made a mistake. If it weren't for their cumbersome bureaucratic procedures, GSKC's troubleshooters would have got to you before we did, but we're leaner and quicker. The thing is, they don't know yet that you've been snatched. Maybe we can fix things so that they never have to find out. They'll take you into residential care anyway, so you can forget your mum's Sunday roast, but you still have a choice: you can work for them, under the contract you've already signed—which included a sheaf of self-serving contingency clauses that you probably didn't bother to read—or you can work for them *and us,* for three times the money. We pay in cash, so the Inland Revenue won't be taking a bite out of our contribution."

Three times the pittance that GSKC were paying me didn't sound like a fortune to me, but these things are relative.

"I want to know what's going on," I said, trying hard to be sensible. "Why are my bodily fluids suddenly worth so much more than they were before the delivery van picked up that first crateload?"

"I'm not sure you'd understand. GSKC are supposed to be operating under the principle of informed consent, so they were obliged by law to tell you exactly what they were proposing to do to you, but my guess is that they didn't make much effort to make it comprehensible, and that you just nodded your head when they asked you if you understood. Am I right?"

I hesitated, but there was no point in denying it. "I'm not stupid," I told him. "Maybe I did only get three GCSEs, with not an ology among them, but that's because I didn't like school, okay? Maybe I have been unemployed long enough to fall into the national service trap, but that's because I won't take the kind of shit you have to take with the kind of jobs people think you're fit for if you only have three GCSEs. I'm not some sort of idiot you can peddle any kind of bullshit to."

"Okay, Darren—I believe you. So how much *do* you know about the kind of manufacturing process you're involved in?"

"They shot some kind of virus into me to modify the cells of my bladder wall," I said. "The idea was to make them secrete something into the stored urine. The pink stuff is just a marker—what they really want is some kind of protein to which the dye's attached. They said they weren't obliged to tell me exactly what it was, but they told me it wouldn't do me any harm. They weren't wrong about that, were they?"

"Not as far as we can tell," was the far-from-reassuring answer. "How much background did you manage to take in?"

"Not a lot," I admitted.

"Then we'd better start from scratch. It really would be a good idea if you listened this time, and tried really hard to understand. You need to know, for your own sake, why you're a more valuable commodity than they expected you to be."

I tried. It wasn't easy, but with my eyes still taped up, I had no alternative but to concentrate on what I was hearing, and I knew I'd have to make good on my boast that I wasn't stupid.

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Apparently, the first animals genetically modified to excrete useful pharmaceuticals along with their liquid wastes had been mice. The gimmick had promised advantages that sheep and cows modified to secrete amplified milk didn't have. All the individuals in a population produce urine all the time, and urine is much simpler, chemically speaking, than milk. Extraction and purification of the target proteins was a doddle—but it had never become economically viable because mice were simply *too small.* Cows and sheep weren't as useful as urine-producers as they were as milk-producers, for reasons far too technical for me to grasp—it had something to do with the particular digestion processes of specialist herbivores—and interest had soon switched to somatically modified human bioreactors. Or, to put it another way, to the ever-growing ranks of the unemployed. It was one of the few kinds of modern manufacturing that robots couldn't do better.

The pioneering mice had mostly had their genes tweaked while they were still eggs in a flat dish, but you can't do that to the unemployed, so biotech companies like GSKC could only do "somatic engineering": which means that they used viruses to cause temporary local transformations in specialized tissues. In effect, what they had done was give me a supposedly harmless bladder infection. It was supposed to be an "invisible" infection—which meant that my immune system wouldn't fight it off, although I could be cured by GSKC's own anti-bug devices as and when required. In the meantime, the cells in the bladder would pump the target protein into the stored urine, ready for export.

Once I'd grasped the explanation that the Vivaldi fan was so eager to put across, I thought I could see a thousand ways it might go horribly wrong, but he assured me that the procedure was much safer than it seemed. In nine hundred and fifty cases out of a thousand, he told me, it all went like clockwork, and in forty-nine of the remaining fifty the whole thing was a straightforward bust.

Fortunately or unfortunately, *I* was the hundredth. What I was producing wasn't the expected product, and the difference was "interesting."

"How interesting?" I wanted to know. "Cure-for-cancer interesting? Elixir-of-life interesting?"

"Biotech isn't the miracle-working business it's sometimes cracked up to be," the Midland accent assured me. "Interesting, in this context, means *we need more time to figure out what the hell is going on.* Where we are now, as you've probably guessed, is just a collection point. We can do simple analytical tests on the kitchen table, but we don't have a secret research lab in the basement. We could probably sell you on with the samples we've collected, but that would move our employers into much more dangerous and complicated territory, crimewise, and they're very image-conscious. It would be a lot easier for them, as well as more profitable for everyone concerned, if we were to handle you. That's why you and I need to renegotiate our relationship."

"Okay," I said, way too quickly. "You convinced me. What's your offer, and what do you want me to do?"

"We want you to take a couple of tiny tape recorders with you when GSKC take you back in. And we want you to take the principle of informed consent a *lot* more seriously. Demand to see the documentation—they're legally obliged to show it to you. They'll probably be quite prepared to believe that you can't read the stuff without moving your lips, so don't be afraid of spelling out the complicated words loudly enough to make an impression on the tape. We can't use transmitters because they'll almost cer-

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tainly have detectors in place, but the simple methods are always the best. We'll make arrangements to have the first recorder picked up tomorrow—hide it behind the bedhead, if you can. Left hand side—*your* left, that is. Can you remember all that?"

"I'm not stupid," I reminded him. How could I be? I'd just become a secret agent: an industrial mole.

"If we take the tape off your eyes and wrists, Darren," my oh-so-friendly captor pointed out, "we'll be taking a big risk—but you'll have to take your share of that risk. Once you're in a position to put us in deep trouble, we'll have to take precautions to make sure you don't."

Or to put it another way, I thought, *once I've seen your faces, the only way you can stop me describing them is to shoot me. Once I'm in the gang, resigning could seriously damage my health.* It might be easier, I realized, to call their bluff about selling me on as I was—but my arms were aching horribly, and there was a possibility that GSKC might not be the highest bidder.

"I'm in," I assured him. "Just get this fucking tape off, will you."

"We know where you and your mum live, Darren," the Vivaldi fan reminded me. "We even know where your gran lives."

I couldn't quite imagine them sending a hitman all the way up to Whitby with instructions to break into an old people's home and shoot a ninety-two-year-old who usually didn't know what day it was, but I could see the point he was trying to make.

"It's okay," I assured. "I'm on your side. One hundred percent committed. I always wanted a more interesting job. Who wouldn't, when the alternative's having the piss taken out of you relentlessly, literally as well as metaphorically?"

I knew he'd be impressed by the fact that I knew what "metaphorically" meant.

"Okay, Darren," he said, after a few more seconds' hesitation. "I'll trust you. You're in."

The first surprise was that the female kidnapper not only had real blonde hair under the peroxide wig, but wasn't really fat or fifty-five. I could almost have wished I'd known that earlier, although it wasn't a train of thought I wanted to follow.

After that revelation, it wasn't quite as surprising to find out that the man who supposedly didn't do nice had also been heavily padded and that his cauliflower ears were as fake as his Honey Monster grin. He really did look fiftyish, but he seemed more bookish than brutal.

The team leader turned out to look more like a twenty-five-year-old nerd than a gangster. I wouldn't have cared to estimate how many GCSEs the three of them had between them.

The gun, on the other hand, was real.

Once they'd made up their minds, they moved swiftly to get me home before anyone knew I'd gone. The only one who told me his name was the Vivaldi fan, and I was far from convinced that "Matthew Jardine" wasn't a pseudonym, but it seemed like a friendly gesture anyway.

Jardine lectured me all the way home, but I tried to take in as much of it as I could. I had no option but to be the gang clown, but I knew that I had to make an effort to keep up if I were going to build a proper career as a guinea-pig-cum-industrial-spy. He dropped me on the edge of the estate. Because it's a designated high crime/zero tolerance area, we have almost as

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many hidden CC-TV cameras around as the average parking lot, even though the kids have mastered six different techniques for locating and disabling them.

The repacked shopping bags didn't look too bad, but I had to hope that Mum wouldn't make too much fuss about the missing wine or the frozen peas and fish fingers being slightly defrosted. I needn't have worried; she was much too annoyed about the phone ringing off the hook. She hadn't answered it, of course—she always used the answerphone to screen her calls—but she was paranoid about the tape running out. GSKC had left seven messages in less than four hours.

I called back immediately, as requested.

"Mr. Hepplewhite," the doctor said, letting his relief show in his voice. "At last. Thanks for getting back to us."

I had my story ready. "That's okay, mate," I said. "I'm sorry I was out, but I was watching the match on the big screen down at the Hare and Hounds. Not a drop of alcohol passed my lips, though—it was bitter lemons all the way, especially when the opposition got that penalty."

"That's all right, Mr. Hepplewhite," he assured me. "It's just that something's come up as a result of the samples you delivered yesterday. It's nothing to worry about, but we'd like you to come in as soon as possible. In fact, we'd like to send a taxi to pick you up now, if it's not inconvenient."

"Well," I said, acting away like a trooper, "I don't know about that. I had plans for later—and Mum was just about to put a ham and mushroom pizza in the oven."

"We'll pay you overtime, of course, as per your contract. We'll even send out for a pizza." He carefully refrained from mentioning that they wouldn't be letting me out again, and I carefully refrained from letting on that I already knew.

"Okay," I said. "If it's that important."

I took Mum into the bathroom to brief her and turned the taps on, just in case. You can't be too careful when you live in a high crime/zero tolerance area.

The taxi was round inside ten minutes, but it didn't take me to the general hospital where I'd signed on. It dropped me at a clinic way out in the country, halfway to Newbury. As soon as I saw the place, I knew how far I'd come up in the world. It was a *private* clinic—the sort that you have to pay through the nose to get into if you don't have an organization like GSKC to pay your way. It was the sort of place where someone like me would normally expect to be hanging around in reception for at least half an hour, but I got the VIP treatment instead. Two doctors—one male, one female—pounced on me as soon as I was through the door and led me away.

The room they led me to wasn't quite as palatial as I'd hoped, but the bed seemed comfortable enough and it did have a wooden bedhead rather than a tubular steel frame. The TV was a twenty-six-inch widescreen. There was a highly visible CC-TV camera in the corner, with its red light on, but I guessed that it probably wasn't the only one.

The male doctor asked me to undress, and an orderly took away my clothes as soon as I had, but by that time I'd already managed to secrete one of Jardine's bugs behind the bedhead and another in the jacket of the green pajamas they provided.

When the female doctor offered me a cup of tea, having condescended to

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tell me that her name was Dr. Finch, she tried hard to make it sound as if she were merely being polite, but I'd seen enough movies to know what a hidden agenda was.

"I'd rather have coffee," I said. "Cream, no sugar. A few bourbon biscuits would be nice, while I'm waiting for my pizza."

I got tea, and lots of it. Mercifully, they didn't want any other samples just then.

Dr. Finch really was plump and fiftyish, but she was far from blonde. I waited patiently while they did their stuff, munching on the ham and mushroom pizza they'd ordered in for me—which, to be fair, was a little bit better than the one I'd bought in Sainsbury's—but I was ready for them by the time they braced themselves to tell me that they were enforcing the clause in my contract that allowed them to admit me for twenty-four hour observation whether I liked it or not.

"I suppose it's okay," I said, by way of brightening their day before I began biting back, "but I need to understand what you're doing. You have to tell me why, don't you? I believe you mentioned the principle of informed consent. It's the law."

"You didn't seem very interested last time," the male doctor said, suspiciously. His name was Hartman. I'd never seen him before but I didn't bother to ask him how he knew.

"I've been thinking about it a lot," I told him. "I've even done some reading. Something's gone wrong, hasn't it? Your virus has turned rogue. I'm infectious, aren't I? You've gone and given me some kind of horrible disease." It was all claptrap, but they didn't know that I knew that. They had to set my mind at rest.

"No, no, no, it's nothing like that," Dr. Hartman hastened to assure me. "It's just that we're not getting the protein we expected. We think we may know why, but we need to be sure. If there are any awkward side-effects, of course, we can kill the virus off just like *that.* We need to monitor the situation, at least until we've confirmed our hypothesis as to why the translocated gene isn't behaving the way we expected it to."

"Well," I said, temptingly, "I guess that would probably be all right . . . but you have to tell me exactly what's going on. It's my body, when all's said and done, and I have to look after it. Do you think I might be able to patent my bladder?"

He looked at me suspiciously again, but all he saw was a twenty-year-old benefit scrounger with three GCSEs, and not an ology among them.

"Okay," he said, finally. "I'll explain what we're doing. How much do you know about the Human Genetic Diversity Project?"

"What I've read in the papers," I told him. "Second phase of the Genome Project. Greatest scientific achievement ever, blueprint of the soul, key to individuality, etcetera, etcetera. Individually tailored cures for everyone, just as soon as the wrinkles have all been ironed out. I take it that I've just been officially declared a wrinkle."

"What the first phase of the HGP gave us," Dr. Hartman said, putting on his best let's-blind-the-bugger-with-bullshit voice, "was a record of the genes distributed on each of the twenty-four kinds of human chromosomes. There are twenty-three pairs, you see, but the sex chromosomes aren't alike. We've managed to identify about fifty thousand exons—they're sequences that can be turned into proteins, or bits of proteins—but not nearly as many as we'd expected. Before we'd completed the first draft, way back in 2000, we fig-

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ured that there might be anything up to a hundred and fifty thousand, but we were wrong-footed." He paused.

"The reason for that, we now know, is that we'd drastically underestimated the number of *versatile exons*—expressed sequences that contribute to whole sets of proteins. Twentieth-century thinking was a bit crude, you see: we thought of genes as separate entities, definite lengths of DNA laid out on the chromosomes like strings of beads, separated by junk. The reality turned out to be a lot messier. All genes have introns as well as exons, which cut them up into anything up to a dozen different bits, and some genes are so widely scattered that they have other genes inside their introns. Some so-called *collaborative genes* producing proteins of the same family share exons with one another, and we're even beginning to find cases where genes on different chromosomes collaborate.

"The HGDP is gradually compiling a catalogue of all the different forms of the individual exons that are present in the human population. A directory of mutations, if you like. Before we knew how many versatile exons there were, we assumed that would be a fairly simple matter, but now we know that it isn't. Now we know that there are some mutations that affect whole families of proteins, complicating the selection process considerably because it allows individual base changes to have complex combinations of positive and negative effects."

He stopped to see whether he'd lost me yet. I just looked serious and said: "Go on. I'm listening."

"Most of the genes that were mapped before the basic HGP map was complete were commonly expressed genes, producing proteins necessary to the functioning of each and every cell in your body. Exon sets that produce proteins that only function in highly specialized cells, or proteins that only function at certain periods of development, are much harder to track down, but we're gradually picking them off, one by one. Finding a protein is only the first step in figuring out what it does, though, and investigating whole families of proteins can be very tricky indeed." He frowned.

"The exon set that we imported into your bladder cells was big, but by no means a mammoth, and our preliminary observations of its operation *in vivo* hadn't given us any cause to think that it was anything other than a straightforward single-protein-producer, but in the admittedly alien context of your bladder wall, the exons have revealed a hitherto unsuspected versatility. They're pumping out four different molecules, which might only be disassociated fragments of a single functional molecule, but which might be functional in their own right. At any rate, they're not the expected product. If it's all just biochemical junk, we're all wasting our time, but if it's *not* . . . well, we need to find that out."

"Suppose my contract runs out before you do?" I asked, innocently.

"There's a possibility of renewal," he said, and was quick to add, "at the designated higher rate, of course. You'll be getting all the customary overtime and unsocial-hours premiums while you're here, so this could work very much to your advantage. But to answer your earlier question, if you intended it seriously: no, you won't be able to patent anything on your own behalf, or share in any revenues from any patents *we* might obtain. That's not the way the system works."

"I figured that," I admitted. "Am I the only person you've tried this virus on?"

This time, Drs. Hartman and Finch looked at me very closely indeed.

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Mum had always told me that I had an innocent face, but this was the first time I'd had real cause to be glad about it.

"No," Dr. Finch admitted. "We always replicate. That's standard procedure. But you're the only member of the cohort who's producing the anomalous protein-fragments, if that's what you want to know. People are *different,* Mr. Hepplewhite. It would be a dull world if we weren't."

"Amen to that," I said. "It's okay if you're keen to get on. You can update me in the morning. I'd like to see the paperwork, though—see if I can get to grips with the specifics."

That was over the top. They knew something was up. "You do realize, Mr. Hepplewhite," Hartman said, coldly, "that you've signed a non-disclosure agreement. In return for our taking proper care to obtain your informed consent to the experiment, you've guaranteed that everything we tell you, and anything you might find out on your own, is absolutely confidential."

"Absolutely," I assured him. "But we all have to abide by the principle of informed consent, don't we. I'm consenting, so I need to be informed. Can I have the paperwork?"

The CC-TV cameras were working to my advantage as well as theirs. They knew that if they found anything *really* interesting, their intellectual copyright claims would have to be cast iron. It wasn't enough for them to do everything by the book; they had to be *seen* to do everything by the book.

"All right, Darren," Hartman said, pronouncing my name as if it were an insult. "We'll show you the records. That way, you'll know as much as we do." He was mocking me, but he was too careful to say out loud that I was too stupid to understand a word of it. I didn't mind. The assumption would make it all the more plausible when I started spelling out the long words audibly.

There was, of course, a veritable mountain of paper—enough to keep me busy for a month, if I'd bothered to read every word—and I knew after a single glance that I wouldn't be able to understand it if I had a hundred years to study it, but I was all set to do my level best to sort out the good stuff from the blather. A fresh pot of tea arrived with the mountain in question, plus a pitcher of ice-water, a two-liter carton of fruit juice, three packets of crisps and a jar of salted peanuts. I noticed that the temperature of my room was a little on the warm side, and remembered that the pizza had been rather salty.

I figured that it was going to be a long night, but I didn't even glance at the cable-TV guide that had been carefully placed on my bedside table. I had work to do.

In the morning, Mum came to visit me—and she wasn't alone. The Vivaldi fan had spruced up a treat, although his blue suit was a little on the loud side.

I figured out later that Mum must have told the receptionist that the guy was my big brother, but that when the data had been fed into the computer, the consequent mismatch with my records had set off an alarm. Mum had hardly had time to hug her little boy when Dr. Hartman came hurtling through the door, accompanied by a security man whose cauliflower ear definitely wasn't a fake.

"I'm sorry, sir," Hartman said, "but you'll have to leave. I don't know who you are, but . . ."

He was interrupted by the business card that the man in the blue suit

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was thrusting into his face. There was something on it that had stopped him in mid-flow, and I figured that it probably wasn't the name.

"Matthew Jardine," Mum's companion said, helpfully. "I'm Mr. Hepplewhite's agent. I also represent Mrs. Hepplewhite, and her mother, a Mrs. Markham, currently resident in Whitby, Yorkshire. As you probably know, that's the entire family, unless and until someone can identify and trace Mr. Hepplewhite's father—who is probably irrelevant to our concerns."

I was impressed. Signing Mum was one thing; signing Gran—if he really *had* signed Gran—represented serious effort and concern. On the rare days when she knew what day it was, Gran had a temper like a rat-trap.

"Darren—Mr. Hepplewhite—signed all the relevant consent forms himself," Dr. Hartman said, through gritted teeth. "Even if whatever agreement you've signed with Mrs. Hepplewhite has some legal standing, which I doubt, you can't represent Darren. He's *ours*."

"We shall, of course, dispute your claim," said Jardine, airily. "I think you might find that your forms are a trifle over-specific. While you might—and I stress the word *might*—be able to exercise a claim to ownership and control of the gene that you transplanted into Mr. Hepplewhite's bladder, the rights so far ceded to you cannot include the right to exploit genes that *he* has carried from birth, having inherited them from his parents. I have documents ready for Mr. Hepplewhite's signature that will give me power of attorney to negotiate on his behalf in respect of any and all royalties to be derived from the commercial exploitation of any exotic native proteins derivable from his DNA."

While he was speaking, Jardine drew a piece of paper from his inside jacket pocket. It looked suspiciously slight to me, but Hartman was staring at it as if it were a hissing cobra, so I figured that it could probably do the job.

"You told me I couldn't patent myself," I said to the doctor, in a deeply injured tone that was only partly contrived. "That's not what *I* call *informed* consent."

"Don't sign that paper, Darren," Hartman said. "Our lawyers will be here within the hour. If you sign that thing, we'll all be tied up in court for the next twenty years. It'll be bad for you, bad for us, and bad for the cause of human progress. And if it should transpire that you've seen this man before, or had any dealings with him of any sort, you and he will probably end up in jail."

"Mr. Hepplewhite and I have never met," Jardine lied, "although I do have the honor of his mother's acquaintance. While your robots have been working flat-out on Mr. Hepplewhite's genomic spectrograph, a similarly eager company has been working on hers—purely by coincidence, of course."

"Coincidence, my arse!" Hartman retorted. "If you hadn't got your hands on some of Darren's samples . . ."

"Before you level any wild accusations against my client," Jardine interrupted, smoothly, "it might be as well if you were to check the security of your computer systems."

"He's *not* your client," Hartman came back. "And hacking databases is a crime too, in case you've forgotten. And we both know perfectly well that your hackers couldn't possibly have gotten enough out of routinely logged data to get you into a photo finish in figuring out what's going on. If you really have been to Whitby and back . . . you were a fool to come here, Mr. Jardine."

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"If I hadn't," Jardine countered, smoothly, "we both know that you'd have robbed my client of his rights by lunchtime. If GSKC's lawyers are scheduled to get here within the hour, you must have summoned them before you sat down to breakfast—and don't try to tell me that they aren't going to turn up armed with bulging briefcases, full to the brim with neatly drafted contracts. Now . . ."

"Oh, just throw the fucker out," Hartman said to the security man, exasperatedly.

For a kidnapper, the Vivaldi fan seemed surprisingly unready for the unsubtle approach. He tried to thrust his magic piece of paper into my hand while he reached for the bedhead with his free hand, as if to use it as an anchor.

Even as I reached out to take the paper, Dr. Hartman snatched it from Jardine's grip and ripped it into shreds. Meanwhile, the man with the real cauliflower ear seized poor Jardine in a full nelson, tore his groping hand away from the bedhead and dragged him out of the door.

"Informed consent, Darren," said Hartman. "Remember that. I *know* you're not as stupid as you pretend, so if your mum just happens to have another copy of that agency agreement stuffed in her knickers, I suggest that you advise her to keep it there until I've had a chance to explain to you exactly why that snake is so desperate to get your entire family on his books, even though he knows full well that the arrangement wouldn't stand up in court."

"Right-oh, doctor," I said, cheerfully, as Hartman followed his tame bully, leaving me alone with Mum. I didn't bother to check the bedhead to see if the tiny tape recorder had gone. I knew that it had. I figured that it probably hadn't a single useful item of information on it, in spite of all my heroic efforts, but I was now beginning to figure out how the game was being played. The tape of my conversation with Drs. Hartman and Finch and my subsequent semi-articulate mutterings was primarily intended to demonstrate—to a court, if necessary—that the information I'd been given wasn't sufficiently full or complete to fulfil their obligations under the principle of informed consent, and thus to prove that my contract with GSKC plc was invalid. Maybe a court would accept that and maybe it wouldn't, but when Hartman had mentioned the possibility of being tied up in the system for twenty years he'd been voicing his worst nightmare. The pseudonymous Mr. Jardine presumably had friends who weren't particular about the niceties of patent law, who probably had excellent connections in the black market therapeutics business.

"Mr. Jardine's a nice man, isn't he?" Mum said. "He brought me a really nice bottle of wine—sweet and fruity, just the way I like it. Just as well, considering that *you* forgot. He says I've got a really interesting genomic spectrum. *Rare* and interesting."

"I'll bet he did," I said. It had just occurred to me that if I'd inherited whatever the kidnappers-turned-bribers were interested in from Mum, and they'd already signed Mum up, I might be in danger of becoming surplus to his requirements. If that were the case, it might serve Jardine's purpose just as well to have me tied up in the courts for twenty years as to have me on his payroll. If he'd really wanted me to sign some kind of agency agreement he could have done it before turning me loose—except, of course, that he might have had to explain how he'd been in a position to do it. The only thing I knew for sure was that his side were even less interested in the principle of informed consent than Hartman's.

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"Well anyway," Mum said, "How are you, love—in yourself, I mean?"

She didn't really want to know, but I told her anyway, just to soften her up. "Did they really send someone to Whitby to see Gran?" I asked, although I knew it was dangerous, given that everybody and his cousin was probably listening in.

"Oh yes," she said. "Mum'll be right pleased. It gets boring in that home, you know. A sea view isn't everything—especially when the edge of the cliff keeps getting nearer every time there's a storm."

"This thing must really be big," I said, thoughtfully. "I don't suppose they told you why it's so valuable."

"They didn't say *valuable,* exactly," Mum confessed, as she investigated the contents of the tea-urn on my bedside table. "Just *interesting.* That was nice, though, wasn't it? I've never been interesting before. Not since I turned thirty, anyhow. I was interesting before that, all right—but you have to settle down a bit eventually, don't you. Not as much as Stan wanted me to, obviously, but . . . I don't suppose there's a chance of a fresh brew, is there, love? I'm parched."

"You can get tea by the gallon here," I told her, absent-mindedly pressing the buzzer. Mention of Stan—the husband she'd divorced two years before she had me, whose surname I'd got stuck with even though he wasn't my father—made me wonder whether Jardine might conceivably be running a bluff on Hartman with regard to Mum and Gran. Signing up all the antecedents he could find might have been a sensible precautionary measure, and he'd obviously *pretend* that he'd gotten what he wanted, even if what he *really* needed was time to try to find the parent from whom I *had* inherited the klondyke gene. If so, he'd have a real problem on his hands. Mum had always told me that she didn't even know the guy's name, let alone his whereabouts. She might have been lying to deflect my curiosity, but she might not.

I shook my head, dazedly. It was all happening too fast, and my imagination was beginning to run away with me.

More tea arrived soon enough, and so did Dr. Finch. She had the grace to look a bit sheepish.

"I'm sorry about all the fuss, Darren," she said. "We didn't expect anything like that to happen. I'm afraid, Mrs. Hepplewhite, that you might have been unwise to sign anything that man put before you. He's not the sort of person I'd want to act on my behalf."

"What sort of person is he?" I asked, interested to find out what GSKC might know about my erstwhile kidnappers.

"Do you know what biopiracy is?" Dr. Finch countered.

"No," I confessed.

"I do," Mum put in. "I saw a documentary about it on BBC-2. It's where multinational companies go prospecting for rare genes in underdeveloped countries and steal all the traditional medicines that the natives have been using for millions of years, and make fortunes out of the patents."

"Well, that sort of thing *has* happened," said Dr. Finch, judiciously, "but that's not exactly what I mean in this case. The pirates I'm talking about operate closer to home. They keep a close watch on the research that companies like ours are doing, with a view to pirating our data on behalf of black marketeers who sell counterfeit drugs. Sometimes, though, it isn't enough to steal a base-sequence. In theory, anyone who knows the base-sequence of

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a particular gene can build a copy *in vitro* in order to produce the relevant protein, but some genes need the assistance of other biochemical apparatus to put different bits of a protein together and fold the resultant complex into its active form. Some proteins can only be produced in living cells, and a few can only be produced in living cells with a particular genomic spectrum. Maybe more than a few—but so far, we've only found a few. Human proteomic science is still in its infancy, and because of the unexpectedly large number of versatile exons in the human genome, it's turning out to be a more complicated business than anyone anticipated."

"What you're saying," I said, to make sure that I was keeping up as well as I could be expected to, "is that whatever is happening inside my bladder—but not in the bladders of the other people you roped into the experiment—can only happen inside *me,* or someone with the same genetic quirk as me."

"I wouldn't go that far," Dr. Finch parried.

"But you think I might be in *danger?*" I said. "You think somebody might try to *kidnap* me—or Mum, or even Gran." I knew it had to be bullshit, given that I'd already been turned loose once, and that Jardine could have kept hold of Mum instead of giving her a lift to the clinic if he'd wanted to, but I was a spy now and I had to use a spy's tricks.

"You've got hold of the wrong end of the stick," the doctor assured me. "What's at stake here isn't mere possession of the bioreactor that your bladder has become, or another body that shares the genes responsible for the anomaly. What we need—and what might, in principle, be pirated—is an understanding of the interactions that are happening between your body and the gene we tried to transplant into you. Once we understand the manner in which the exons are collaborating, we won't actually need your entire body, or anybody else's, to reproduce the interaction. Any clonable tissue sample would be adequate, although the most efficient technique uses semen samples—it allows us to select out those sperms with the most useful combinations of exons, so that we can fertilize eggs and produce whole series of easily clonable embryonic hybrids. As your mother pointed out, albeit in the wrong context, biopiracy is all about intellectual property rights. Biotech patents are a real minefield, and this case could be a precedent-setter. It'll be bad enough if Mr. Jardine's backers are only intent on stalling us while they try to develop a couple of therapeutic products for black market distribution—if they really do want to go for the big prize by establishing property rights of their own, that would be a very different ball game."

I wasn't at all sure that I was following the details, but I'd seen enough gangster movies to know that the more businesslike Mafia men always want to use their ill-gotten gains to set up legitimate businesses, so that they can start swimming with the real sharks. Suddenly, the fact that the deceptive blonde had gone to the bother of extracting more than piss from my hapless prick began to seem more sinister than embarrassing. I wondered whether the three musketeers had been overtaken by events for a second time, and were now wishing that they *had* hung on to me instead of trying to turn me into a Judas. On the other hand, I was probably worth far more to them as a willing double-agent than a hostage.

"What do you mean by *precedent-setter?*" I asked Dr. Finch. "What's so special about my trick bladder that I've been promoted in easy stages from national service nobody to the guy every agent in town wants to sign within the space of twenty-four hours?"

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"I think I ought to wait for Dr. Hartman and the lawyers before saying any more," Dr. Finch said, worriedly.

"Mr. Jardine suggested that you might want me to join in your experiments," Mum put in, "but he was very insistent that I shouldn't sign anything without him being with me. He also told me to look after Darren." She sounded innocent enough, but I'd always suspected that I hadn't got my lack of stupidity from my Dad.

"Nobody's going to hurt Darren," Dr. Finch assured her. I noticed that she didn't say anything about the possibility of recruiting Mum to the program.

"Mr. Jardine also said," Mum went on, slowly, "that no matter what Darren's signed, you can't *imprison* him. No matter what he agreed to when he signed your forms, he's still free to walk out of the door. You can sue him, but you can't *stop* him. Not *legally.* If I wanted to take him home and you tried to stop me . . ." Mr. Jardine had obviously schooled her thoroughly while he was giving her a lift to the clinic.

"All *right!*" said Dr. Finch, putting up her hands. "Nobody's saying that Darren's a prisoner—just that he has responsibilities. Nobody wants to sue anybody. We want everybody to be happy. He is getting *paid* for being here!"

"Mr. Jardine *also* said . . ." Mum began—but the door opened before she could start haggling.

I wasn't in the least surprised to see Dr. Hartman and the security guard, or the two suits that were with him, but any illusions I had about knowing what was what vanished when one of the suits stepped forward and shoved an ID card in my face.

He wasn't a corporate lawyer. According to the ID card he was Lieutenant-Colonel Jeremy Hascombe of "Special Services." I'd seen enough movies to know that "Special Services" was the organization that had risen out of the ashes of MI6's funeral pyre, but I'd never been certain that they actually existed. Apparently, they did.

When the colonel showed the ID to Dr. Finch, her astonishment made mine look distinctly feeble. "Oh, Mike," she said. "You *didn't.*"

"Of course I didn't," Hartman growled, through gritted teeth. "They had the pirates under surveillance all along. Whatever their hackers got went straight to the spooks. They're trying to pretend that this thing has defense implications."

That was worrying. If Special Services knew that I'd been snatched outside Sainsbury's, they must also know that I'd been recruited as a double-agent. I didn't suppose that Special Services needed to pay any heed at all to the principle of informed consent.

"That's ridiculous," Dr. Finch said. "The management will fight you, you know. You can't just march in here and take over!"

"Show the doctors out, will you, Major," said Jeremy Hascombe.

"Now just you wait a minute. . . ." the security guard began—but when Hascombe rounded on him and looked him straight in the eye, he trailed off. He was probably ex-army, and he still had his carefully trained habits of respect and obedience.

The same didn't apply, of course, to the lawyer who came bounding through the door at that moment to take up the slack, but he didn't get anywhere either. His first sentence began with the words "I insist" but I never got to hear what it was he was insisting on.

"Just get them out," Hascombe said to his associate. "*All* of them."

The associate didn't look particularly intimidating, but the way he

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grabbed the lawyer casually by the throat was wonderfully menacing. It wasn't only the lawyer who spluttered into total silence. The sheer insolence of the gesture was breathtaking. Everybody knew that we were on camera, and everybody knew that they would be held accountable for whatever they did. I wondered what it might be like to have the power and authority, not to mention the sheer front, to grab a *corporate lawyer* by the throat.

"This," said Jeremy Hascombe, equably, "is now a matter of national security."

His associate guided the lawyer carefully through the door. The two doctors and the security guard followed them meekly.

"Could you possibly give me a few moments alone with Darren, Mrs. Hepplewhite?" the colonel said. "No harm will come to him, I promise you."

Mum looked the colonel straight in the eye, but when she spoke it was to me. "It's not three any more, Daz," she said. "It's ten." She never called me Daz. She'd always disapproved of anyone who did, even though that had excluded practically all my old schoolfriends.

"Make that twenty," Dr. Hartman called out from the corridor, although he was too intimidated actually to stick his head around the door. It might have been a stab in the dark, but I got the impression that he knew exactly what the Vivaldi fan had offered me the day before, and what Mum was trying to tell me. Three times the so-called wage that GSKC paid national service recruits was still a fair way short of a doctor's salary, but ten was a pretty fair wedge, and twenty was adequate by anyone's standards. I figured that what Dr. Hartman was trying to get across was the suggestion that if I refused to play ball with Jeremy Hascombe, then GSKC plc would look after me as best they could.

I'd seen enough movies to know that big multinational corporations paid *way* better than governments, but tended to be far more ruthless if they were mucked about.

When he'd shut the door behind Mum's retreating bulk, Colonel Hascombe sat down beside the bed and put out his hand. "Give me the other recorder, Darren," he said.

I was tempted to tell him to look for it, but I didn't fancy being searched. I unclipped it from the pocket of my pajama-top and gave it to him.

"Cheap Korean crap," he observed, as he put it into his coat pocket. "That should tell you something about the people you're in bed with. The Americans are *so* much better at this sort of thing. It almost makes you wish that they were on our side."

"I thought they were," I said.

"If you listened to the politicians," Hascombe told me, "you'd think that we didn't have an enemy in the world, except for a couple of ex-colonies that aren't talking to us just now. It's true, in a way—but that doesn't mean that everybody else is *on our side,* even if they operate freely on our soil. Do you see what I mean?"

What he meant was that dear old England wasn't "on the same side" as GSKC plc, but Dr. Hartman had already made that obvious.

"Whose side are *you* on, Darren?" the colonel wanted to know. It was a good question.

"Mine," I said, unhesitatingly.

"That's what I thought," he said. "Which makes you the weakest piece on the board: all on your own with not an honest ally in sight, with the possible

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exception of your mother. Not that you've had a lot of choice so far, given that everybody else who's tried to deal with you has been as likely to rat on you as you are on them. They'll offer you money, of course—and keep on upping the stakes every time you seem likely to turn—but they're not people you can rely on."

"And *you* are?" I said, skeptically.

"I have to be," he told me. "I'm not a crook or a businessman. I represent the king, parliament, and the people. My word has to mean something."

I didn't say anything in response to that, but my face must have told him that it was so far beyond believable as to be funny.

"What a world we live in," he said, with a sigh. "You'd rather deal with pirates than with GSKC, and you'd rather deal with anyone than representatives of your country. What does that say about *you,* Darren, apart from the fact that you've watched too many bad movies?"

"What I'd rather deal with," I told him, frostily, "is someone who was prepared to tell me the fucking truth about why my market value goes up another notch every time somebody takes another bucketful of my piss. I didn't want to be a fucking guinea-pig in the first place and I certainly don't want to end up as a fucking *secret weapon*—so if you aren't going to tell me what the fuck is going on, Jez, why don't you just *fuck off?*"

He didn't flinch and he didn't get angry.

"Okay," he said. "You'll need to know, whether you decide to come aboard or not, and I'm betting that nobody else will make much effort to tell you the truth. How much have they told you so far?"

"Bugger all," I said, resentfully. I waved a hand at the paper mountain. "They gave me plenty to read, as you can see, but it might as well be hieroglyphics. Apparently, they stuck some gene into my bladder expecting that it would fill my piss full of some kind of useful protein. It didn't. Instead, I got four different proteins, or bits of proteins. Everybody knew that last night, so something new must have come up in the meantime. Finch was just waffling, but I gather that they've now got interested in whatever there is about me that was making the transplanted gene act up. If the original target protein had been especially valuable, I wouldn't have been walking the streets in the first place, and if one of the four unexpected by-products had been a gold mine, the pirates would probably have hung on to me instead of sending me back, so I'm betting that once they began to figure out what my bladder had done to the target, they began wondering about what it could do to *other* proteins . . . and what it might already be doing inside me. Right so far?"

"Spot on," he conceded, ungrudgingly. He was obviously surprised that a dolehound with three GCSEs had got that far, but he seemed pleased to know that I wasn't a complete idiot.

"So what is it doing?" I asked. "And what else might it do, with the right encouragement?"

"It'll probably take a long time to work that out," he told me. "Which is why everybody's trying to put a claim in before the hard work starts. All we have so far is hopeful signs—signs that a lot of people have been looking out for, although nobody expected them to turn up in a bog-standard op like this. Have you ever heard of the Principle of Selective Self-Medication?"

"No," I said. "Mum probably has. She watches documentaries on BBC-2."

"Well, put very simply, it means that all living organisms are under continuous selective pressure to develop internal defenses against disease, in-

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jury, parasitism, and predation. Any mutation that throws up a means of protecting its carrier from one of those things increases its chances of survival. A lot of the medicines doctors developed in the last century, from antibiotics on, were borrowed from other organisms that had developed them as natural defenses, but our evolutionary history had already equipped us with a lot of internal defenses of our own—like the immune system—which we'd simply taken for granted. Once the Human Genome Project had delivered a basic map, we were in a much better position not only to analyze our own defensive systems but also to search for refinements that hadn't yet had an opportunity to spread through the population. Most of the publicity associated with the project concentrated on the genes that make certain people more vulnerable to various diseases, cancers, and so on—but there's another side to the coin. We've also been able to search out genes that make people *less* vulnerable to specific conditions: self-medicating factors."

"So Hartman and Finch think I've got one of those: a gene that makes me less vulnerable to some kind of killer disease?"

"Not a gene, as such, although there must be genes that produce the components of the system. What they think you've got is a chemical apparatus that operates alongside genetic systems, influencing the way in which certain exons collaborate in producing family sets of proteins."

"That's enough jargon for now," I told him. "Cut to the bottom line. What am I—a walking antibiotic factory?"

"No. What you've got isn't protection against bacteria, or viruses, or prions—but it *might* be a defense against some kinds of cancers. It might suppress some sorts of tumors by inhibiting the development of modified cells within specific tissues."

"Not just bladder tissue?"

"No—although it'll take time to figure out exactly where the limits lie."

"So I'm immune to some kinds of cancer—but it could take years to figure out exactly which ones, and how many."

"Not immune, but certainly less vulnerable. And it's more complicated than that. There's a selective cost as well as a selective benefit, which is presumably why the condition's so rare."

I could guess that one. Mum had been in her late thirties when she had me, after leading a fairly colorful life. Gran had been just as old when she'd had Mum. "Infertility," I said. "Babies are tumors too."

"That's a crude way of putting it," Hascombe said. "But yes—as well as suppressing tumors, it probably suppresses the great majority of implanted embryos. If it didn't, we'd probably all have something like it integrated into our immune systems. Natural selection couldn't do that for us—but somatic engineers might. What you have isn't an all-purpose cancer cure, and wouldn't necessarily be more efficient than the cancer treatments we already have—but once we understand exactly how it works, it might have other uses."

I nodded, to show that I could follow the argument. Then I said: "And what, exactly, does it have to do with Special Services? Or am I supposed to believe the standard line about all biowarfare research being purely for defense?"

"All *our* biowarfare research *is* purely for defense," the colonel said, with a perfectly straight face. I remembered what he'd said about our humble nation not having an enemy in the world, except maybe for Zimbabwe and Jamaica, but that not being enemies wasn't the same thing as being on the same *side*.

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"Once we understand how it works," I guessed, "we might be able to refine it. Maybe it will throw up better cancer cures—but that's not what interests *you.* I slipped through the net, but if the net were refined . . . selective sterilization by subtle and stealthy means. Not the kind of thing that you could make huge profits out of, in the open marketplace—but Special Services have broader interests than mere profit."

"Now you're being melodramatic, Darren," he said, blithely. "This isn't some conspiracy-theory movie. This is everyday life. We have to be careful to examine every emerging possibility, to analyze its implications for national security . . . its capacity to disturb or distort the status quo. That's what *you* have to do too—examine every emerging possibility, analyzing its implications for your personal security. . . ."

". . . And its capacity to fuck up the status quo," I finished for him. "What's your offer, Mr. Hascombe?"

He didn't object to my failure to address him by his rank. "Security," he said. "The other parties will only offer you money, but they'll cheat you if and when they can. You could spend a lot of time in court, one way and another. On the other hand . . . did you know that because GSKC recruited you under the provisions of the National Service Act, your notional employer, at this moment in time, is His Majesty's Government? Technically, you're on secondment. I don't have the power to confiscate GSKC's data, but I do have the power to confiscate *you.* Your mother's a free agent, of course, but your grandmother is a state pensioner, and thus—*technically,* at least—unable to enter into any contractual arrangements without the permission of HMG. Not that we want to delve into a can of worms if we can avoid it. We'd rather work with all of you as a family, according to the principle of informed consent. We like families—they're the backbone of every healthy society."

I wondered how many healthy societies he thought there were in the world, and how many he expected to stay that way. If he'd told me the truth—which I wasn't prepared to take for granted—I was a walking miracle. I was also a walking time-bomb. Everybody knew that there were too many people in the world, and everybody had different ideas as to which ones ought to stop adding to the problem. Given that everybody and his cousin already had enough of me to start doing all kinds of wild and woolly experiments, I probably wasn't absolutely necessary to the great crusade, but I was young and I was fit, and neither Mum nor Gran had ever produced a milligram of semen, or ever would.

I was rare all right—rare and *interesting.* Nobody had ever thought so before, but the last twenty-four hours had changed everything.

"GSKC could offer me security," I pointed out. "They have people to look after their people." But I was already reconsidering the question of why Hascombe's oppo had taken GSKC's lawyer by the throat, and what the move had been intended to demonstrate.

"We have an army at our disposal," Hascombe pointed out. "Not to mention a police force, various Special Services, and the entire formal apparatus of the law of the land. The people who look after our people are very good at it. But it's your choice, Darren. I wish I could tell you to think about it, but I'm afraid we're in a hurry. You can have five minutes, if you like."

He didn't mean that I had five minutes to decide whether to go with him or stay with GSKC. He meant that I had five minutes to decide whether to go quietly and willingly or to start a small war.

Personally, I quite liked the idea of the war, but I had other people to con-

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sider now—and not just Mum and Gran. It was just beginning to dawn on me that for the first time in my life, I was faced with a decision that actually *mattered,* not just to me or people I knew, but to any number of people I would never even meet.

People had been taking the piss out of me all my life, for any reason and no reason at all: because I was called Darren; because I didn't even know my Dad's name; because I only had three GCSEs and not an ology among them; because I was so desperate and so useless that I'd had to sign up as a guinea pig in order to pay my share of the household expenses; because I was still living with my Mum at twenty, in a miserable flat in a miserable block in an officially designated high-crime/zero tolerance estate; and because I was the kind of idiot who couldn't even do a half-way decent job of being a kidnap victim or a spy.

Now, things were different. Now, I was rare, and *interesting.* I was a national resource. I was a new cure for cancer and a subtle weapon in the next world war. No more Hungarian pinot noir for me; from now on, whatever I chose to do, it would be classy claret all the way.

In a way, I knew, the man from Special Services was holding a gun on me in exactly the same way as the fake fat blonde—but everyone does what he has to do when the situation arises. It wasn't his fault. He couldn't come to me with a fistful of fifty-euro notes, because that wasn't the game he was playing.

But what game should *I* be playing, now that I had some say in the matter?

I knew that the world was full of people who'd have said that a fistful of fifty-euro notes was the only game worth playing, even though it was crooked. Some, I knew, reckoned that it was the only game in town, because governments and Special Services didn't count for much any more in a world ruled by multinational corporations like GSKC. But even on an officially designated high-crime/zero tolerance estate you learn, if you're not completely stupid, that money isn't the measure of all things. You only have to watch enough movies to figure out that what people *think* of you is the important thing, and that not having the piss taken out of you any more is something you can't put a price on. To qualify as a kidnap victim is one thing, to be a double agent is another, and to be a walking cancer cure is something else again, but what it all comes down to in the end is *respect.* Jeremy Hascombe was offering me a better choice than Matthew Jardine or Dr. Hartman, even though he wasn't offering me any choice at all about where I was going and who was going to be subjecting me to all manner of indignities with the aid of hypodermic syringes, dustbusters, and all effective hybrids thereof. He was offering me the choice of doing my duty like a man.

"Okay, Colonel," I said. "I'll play it like a hero, and smile all the while. I don't suppose you brought me anything decent to wear? I don't want to walk out of here in my pajamas."

"No, I didn't," said the colonel, who was too uptight a man to let his gratitude show, "but your mother did. She thought you might need a change of clothes, just in case you could come home for Sunday lunch after all."

It was just as he'd said: family is the backbone of any healthy society. Perhaps it always will be. Who, after all, can tell what the future might hold? ❍

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A RECORD HIGH

Never was there such a hot March day
As yesterday. The temperature in Central Park
Soared to an all-time high of 83.

This was the winter that wasn't a winter,
The almost snowless 1998,
When my driveway only needed plowing once
And the river didn't ice.

In California houses slid into the sea,
And Florida got slammed by freak tornadoes—
All the doing, our anchors inform us,
Of El Niño, that anti-iceberg on its way
To sink the delusive, Titanic glamour
Of our *fin de siècle*.

For there are no coincidences, but only Fate.
The West declines,
And the owl of Minerva sweats in her heavy feathers
And envies the ducks on the cool river,
As Billy Zane envies Leonardo Di Caprio.

There weren't enough lifeboats on the *Titanic*,
But there were some. Your chances of a seat
Improved with your social position
And it helped to have a gun. Lacking either,
There is still the brave little orchestra to savor,
And the immense drama of the mighty wreck,
And the sense that one is participating
In a historic event the size of the ocean.

—Tom Disch

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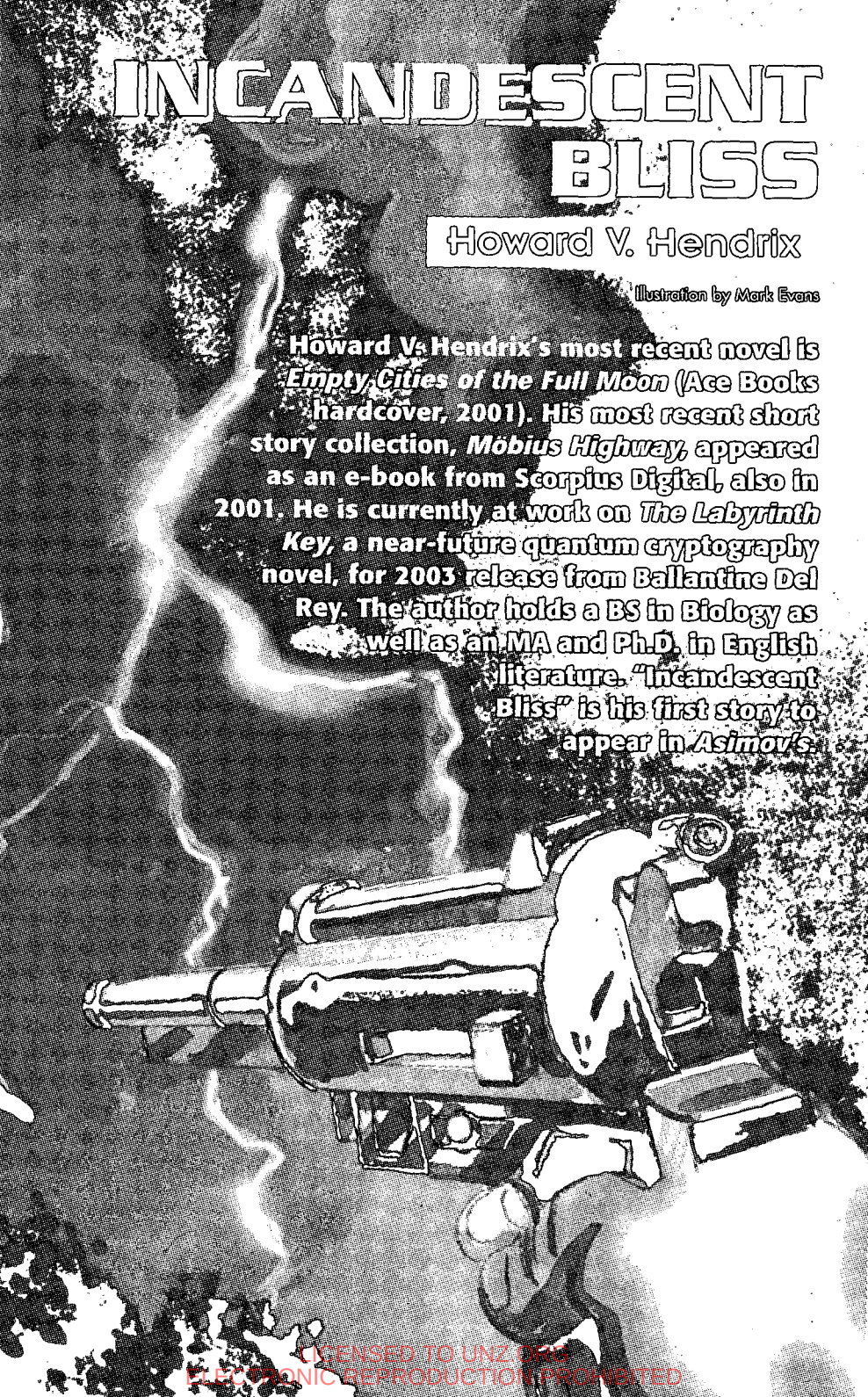
INCANDESCENT BLISS

Howard V. Hendrix

Illustration by Mark Evans

Howard V. Hendrix's most recent novel is *Empty Cities of the Full Moon* (Ace Books hardcover, 2001). His most recent short story collection, *Möbius Highway*, appeared as an e-book from Scorpius Digital, also in 2001. He is currently at work on *The Labyrinth Key*, a near-future quantum cryptography novel, for 2003 release from Ballantine Del Rey. The author holds a BS in Biology as well as an MA and Ph.D. in English literature. "Incandescent Bliss" is his first story to appear in *Asimov's*.



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I.

Lying abed in his favorite red silk robe, Dr. Jaron L. Kwok glances out the window of his tenth story room in the Royal Park Hotel. A lit cigarette smolders between his fingers, its ash lengthening, forgotten. In the distance, green tree-covered mountains hang behind high-rise New Territory apartment blocks, white-painted concrete eroding to grey. On the nearer side of the Shing Mun River stands the Sha Tin town park, where he strolled thoughtlessly the day he arrived in Hong Kong, too jet-lagged for any work requiring much mental effort.

His gaze comes back through the tall narrow gap in the thick curtains, back into the half-darkened room. It lingers on the mess of papers, reports, and scribbled notecard arcana scattered about the bed and on top of his reclining form, half burying him. Disappearing into the data he has collected. Disappearing into his "obsession," as Cherise called it.

Glancing at the bottle of scotch on the table beside his bed, then at the cigarette in his hand, Dr. Kwok sighs. All the old bad bachelor habits. The smoking, the drinking, the sloppiness. All the things he was, before he met Cherise—and she loved him, and he cleaned up his wildman student-radical "Kwok X" act, thinking that was what she wanted.

Was that love, or obsession?

He flicks the ash from his cigarette.

Too late, in any case. By the time he met her, he'd already changed his major from physics and electrical engineering to European intellectual history, mainly to prove wrong all those white *bwana* intellectuals he'd met who thought Asians naturally (or only) excelled in mathematics and the sciences. Too late, by the time he discovered intellectual history was passé and it didn't matter how much more he knew than the *bwanas* did about European culture or American sports—they'd never accept him as a real authority on any of that, deep down.

Never been much good at being what other people expect me to be, he thinks, drawing deeply on the cigarette, fixating on the ashen orange glow of its tip. *No good at all at becoming what other people expect me to become. Too much a fiery creature of two worlds, to be happy in either. Not even for Cherise, in the end.*

He'd tried, but the profession he trained for never accepted him into its ranks—while his blonde wife slid easily into her role as a professor of Chinese and Comparative Literatures. On their second honeymoon (underwritten by a grant funding her translations of contemporary physics and biotech documents), the two of them came to this very hotel. Walked together through the park he can see out the window now. Stood atop the moonbridge there, a married couple reflected in the park's fish- and turtle-filled pond, below the artificial waterfall clamoring nearby, in a palace garden that had lost its palace. And, despite love and obsession, by then it was almost already over between them.

He didn't realize how repelled Cherise would be by his decision to take this National Security Agency assignment: "You call yourself a radical? How could *you,* of all people. . . ?"

He didn't see how she would grow to hate his all-consuming focus on The Documents as they took him further and further away from her—inward through abstract interior spaces of cryptography and virtual reality, outward to Italy and Israel and China—again and again, until she could do

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nothing but make official and final the divorce of the heart that was already splitting them both.

He slugs back a mouthful of the Scotch, feels it burn peat and asphalt at the back of his throat, then slide away numb. He recaps the bottle loosely, drops it on the bed beside him, takes a drag on his cigarette, chews smoke before exhaling. Absently, he fingers the trodeshades propped on his temples. He remembers the early virtualist his tech-savvy parents named him for—and how his technophobic grandmother always mispronounced his first name "Jiren." Paradoxical man. Virtuality pioneer. Maybe both versions of the name fit.

Shifting the trodeshades over his eyes and into place, he says a silent prayer of thanks to his masters at the Puzzle Palace. At least they love his obsessions enough to equip him with top-line VR and binotech. So long as his obsessions are in their service, how can they not love them?

He waits for his latest virtuality to cycle up, wondering if what he's doing *is* in their service anymore. Glancing through the piles of research mounded around him, Jaron realizes the obsessions that led him here have changed. He doesn't care so much anymore about the race between China and America for the first quantum computer/quantum cryptograph. Nor about the encrypted documents CIA handed over to NSA—finally, after fifty years. Nor about how and why Assistant Director Brescoll handed The Documents over to *him* because he knew much Mandarin and more Cantonese; knew European history; had published articles on sixteenth and seventeenth century cryptographic systems, and their links to memory palaces.

Jaron doesn't care so much anymore about whether it was or wasn't a heart attack in 1966 that killed the "old China hand." Or why the old hand willed The Documents—a fascinating mix of ciphers and explications in Hebrew, Chinese, Latin, Italian, and English—to CIA. Jaron doesn't care so much anymore that the old hand was a professor of Asiatic Studies, first at Duke and then at Johns Hopkins. Or that the cold-war spymaster claimed he never mastered the "algorithm complex" so key to understanding The Documents.

Looking through the printed and scribbled notes of his arcana, Jaron doesn't care so much anymore that during the Second World War the old spy was a US Army intelligence officer who helped create the Psychological Warfare Unit. Or that, during summer breaks from Johns Hopkins during the early 1950s, he worked for CIA in Korea, where his greatest accomplishment was figuring a way for thousands of Chinese soldiers to surrender—by saying Chinese syllables for "Peace, Love, and Harmony" which sounded like "I surrender" in English.

Jaron realizes too that he no longer cares that deeply whether the old China hand was or was not a Western godson of Sun Yat-sen. Or whether Dr. Sun gave the eventual spymaster the Chinese name of Lin Bah-loh, "Forest of Incandescent Bliss." Jaron doesn't care so much anymore that the CIA man's father, a Western advisor to Dr. Sun, on his deathbed supposedly gave to his son the documents the son eventually willed to CIA. Or that those documents had remained buried in the Chinese Imperial Archives for three centuries, until they came into Dr. Sun's hands, upon the collapse of Qing dynasty rule.

Jaron no longer cares so deeply that the CIA man's notes suggested the earliest of the materials could be traced back to one Ai Hao. Or that Ai Hao was a member of the diaspora-descended Chinese Jewish community in

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Hangzhou during the late sixteenth and early seventeenth centuries. Or that Ai was also a Confucianist with hopes of rising in the Ming bureaucracy. Or that Ai was studying the memory-palace techniques that Jesuit missionary Matteo Ricci was putting forward in China at that time. Or that it was Ricci who presented to the court of Emperor Wanli the document in which Ai Hao's work was found.

Maybe it's just the Scotch talking, but he also doesn't care so much anymore that late-sixteenth-century Jesuit ciphers were related to the cipher system in the old Chinese Imperial documents. Or that the ciphers NSA had provided to him were taken from the file detailing the heresy charges against Giordano Bruno. Or that Bruno's file had supposedly been lost in the Vatican archives for four centuries, ever since Bruno himself was burned at the stake. Or that the ciphers indicated that Ricci was privy to the use the Jesuit order was making of Bruno's work.

Jaron doesn't care so much anymore that Bruno was the first to believe in infinite universes of infinite worlds, all inhabited by intelligent beings. Or that Bruno claimed that his religious experience was the reflection of the universe within his own memory. Or that Bruno believed that every mind contained its own universe, and that Mind itself is universal and divine. Jaron doesn't even care so much anymore that Bruno believed that to kill a person is to kill a universe, and for that heresy he had to die.

Waiting blankly for the virtuality to finish cycling up, Jaron swirls another dram in his mouth and continues to read and reject his notes almost at random. He doesn't care so much anymore that "The Orient is a construct that never existed except in the minds of Westerners." Or that Ricci felt that his Memory Palace System "seemed as if it had been invented for Chinese letters, for which it has a particular effectiveness and use, in that each letter is a figure that means a thing." Or that "every language has embedded within it both its dataset and its instructions for operation, and Ricci's Western mnemonic system provided the extraordinarily rich data/instruction set of ideographic Chinese with a virtual machine of extraordinary power on which to run—suggesting the enormous potentiality of Chinese characters themselves to constitute a gigantic memory palace."

Absently dusting cigarette ash off his printouts and notecards, Jaron doesn't care so much anymore that "the transcultural clash between western mnemonics and Chinese ideograms, between iconographic imagination and ideographic imagination, made possible a transcultural amalgamation, a hypercultural chimera restoring what was lost when God confused languages to defeat the builders of the tower at Babel." Or that *that* word came from Akkadian *Babilu,* "Gate of God." Or that much of what can be said of Chinese ideograms could also be said of Hebrew Qabbalism.

Staring at a manuscript heavily scribbled over with his own marginalia, Jaron doesn't even care so much anymore that he himself found the final critical piece of evidence for mastering the algorithm complex, not far from Hong Kong, hidden in the Sun Yat-sen Memorial in Guangzhou. Or that the source of that key piece was a German Jewish scholar of the Qabbalah who had successfully escaped to China from Hitler's Germany, only to eventually be captured by the Japanese and returned to the Reich, to perish in the death camps.

Jaron once cared so deeply and obsessively about *all* of that, but no more. He knows now there is no past, only memory. That the many-worlds physicists are right: if he could travel into the past, all he would find there is an-

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other universe. That every past is always and only another universe. Same with the future. He knows that, because he has glimpsed what waits beyond the Gate of God.

He knows that, together, all those universes make up a palace of memory vaster than any Forbidden City. Each room is a universe, finite and consistent in itself, yet radically incomplete, as it always leads onto other rooms. The palace as a whole is essentially infinite and complete, yet radically inconsistent in the differences between each of its innumerable rooms. The plenum of all possible universes is a memory palace sustained by a Mind beyond human comprehension.

And all he cares deeply and obsessively to know now is, What is that Mind trying to *remember?*

His virtuality has finished cycling up. His binotech implants are ready. He can access a sizable chunk of the entire planet's processing power now, if he has to. The cursor is flashing. Time to join the program always already in progress—to jump into the fire and find out, for good and all.

II.

Machine pistol in hand, He parachutes into the garden. The sound of His 'chute's rustling collapse rouses Her from where She drowses behind sunglasses, adrift in a floating chaise on the Pool below the Tree of Life.

"Good afternoon, dear," She says. "You're looking jut-jawed and mightily thewed as a Mormon saint-hero. As usual."

He smiles, wondering why this simulation as it develops around Him is always so *arch*. A projection out of Him? Out of the quantum computational matrix He's accessing? A synergy of both?

"Why thank you, my buoyantly bosomed, bikini-clad blonde helpmate," He says with a wicked grin. As He is Jaron, so is She Cherise—only much more so, as both He and his memory of Her are augmented and exaggerated by the sim-glam that makes Them also Ken and Barbie, Uly and Penny, Eve and Adam, and many, many more. "What have you been up to while I was away? Not snakes and apples, knitting and suitors, getting and spending, I hope?"

She rolls Her eyes, leaps up from the floating chaise, walks upon the water to the shore, shrugs Herself into a white labcoat and replaces Her sunglasses with specs that make Her look instantly intellectual.

"Puh-*leeze*. You'll never let me live that down, will you? Actually, I was just taking a break from my work on the wellness plague, if you must know."

He lets loose a burst of automatic weapons fire from His machine pistol. Ninja-garbed friendship terrorists fall from the surrounding trees, howling about how *real* friends will take a bullet for their friends. One of those fallen nearest dies with the words "The woods are burning, boys!" on his lips. When He removes the dead Ninja's mask, He recognizes the face of the actor who played Willy Loman in a production of *Death of a Salesman* Jaron once saw with Cherise.

"How's the work going?" He asks.

"Splendidly!" She says, leading Them down a perfect ramp to a set of heavy vault doors beneath the roots of the Tree of the Knowledge of Good and Evil. Retina-scanned, They enter cavernous laboratories of clean-room

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white and chrome. "My programmable cellular machines have been very well received. *Newsweek* called me the Madame Curie of the Biotech Century. I would have preferred 'Einstein' and 'binotech,' since mine combine both biotech and nanotech properties—but one can't have everything, even when one has everything!"

Their laughter is cut short as, down a huge ventilation shaft, red-jumpsuited assassins fall toward Them. Before the assassins can stitch Them to pieces with a ballistic lacework of shot lead—even before He can shoot them—Her laser security system cuts them down. He turns to study a real-time holographic display generated by banks of scanning electron microscopes. "Is this how your wellness plague achieves its effects?"

"Exactly. Little cellular mechanics diagnosing and repairing time's ravages and flesh's thousand inherited natural shocks. I figure my mechs are already pushing the likely human lifespan past the two-century mark, restoring much of what was lost to snakes and apples in the first go-round. . . ."

He grabs Her and together They crash through a candyglass window at the last possible instant before an explosion devastates the suite of labs behind Them. After the explosion They stand up, dusting sugary shards off Themselves.

"How are you spreading your little cellular mechanics?"

"Angels in airports, mainly," She says, as They leave the labyrinth of subterranean laboratories. "Crushing vials in lavatories and lounges, releasing the vectoring microbial vehicles. Airborne viruses infecting airborne people with perfect health-repair mechanisms!"

Returned to the surface, They find an eclipse of the sun underway. Clouds gather. Thunder rumbles in the distance. Out of the clouds come nightmare fighters. They start into steep screaming dives.

"But won't ratcheting up longevity ratchet up population too, leading to more pandemonium? The ol' slitherin Adversary didn't whisper these plans in your ear, did he?"

Missiles, bombs, and strafing bullets rake the air and ground, headed for Them.

"You're always so worried about the snake! Why? Because you two are so alike?"

"What do you mean by that?" He asks, as They run serpentine-fashion for cover from the stooping fighter aircraft.

"You're both always so depressing! *He* thought giving people long, healthy lives was a terrible idea too—for the same reasons *you* just harped on. Said We were 'the most pernicious species of vermin' he'd ever seen. Said We were 'like mold on the orange of the world' and that We wouldn't be happy until We've 'consumed the orange away to nothing.' Just plain *rude,* I tell you."

The eclipse deepens. Lightning forks down out of the clouds. A large meteor streams salamandrine fire overhead, unsettlingly close.

"Maybe the old trickster's right, for once. Let's adjourn to *my* labs. I think we can use your programmable cellular machines to counter that ratcheting-up with a ratcheting-down."

"How?" She asks, watching as the meteor explodes in air several miles away.

"An infertility-inducing virus, spread in the same manner as yours. One dormant until activated by the suite of hormonal changes associated with the successful delivery of the first-born, then boom! Rapid microbial multi-

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plication, recurrent extensive scarring of the Fallopian tubes. Like the last plague of Egypt, only inside out—not killing the first-born, but preventing all conception *after* the first-born!"

The blast and shock waves from the meteor's terminal airburst knock the fighter aircraft out of the skies and throw Them to the ground. Once They pick Themselves up, They see an older man approaching. They recognize him as Giordano Bruno, in a white robe and dragging a white parachute, both embroidered with images of devils and flames. His clothes and chute canopy are singed. "The woods are burning!" he says. They see it is true: The meteoric explosion has set the forests of the garden aflame closer to the point of the airburst.

"I suppose China might offer you asylum for doing such a thing," She says, "but why?"

The eclipse is now total. Wind and storm rage about them. The earth shakes. Alien spacecraft drop from the darkened air.

"Don't listen to Him!" says the Newcomer, who looks exactly like Him. He has beamed into existence beside Them, machine pistol in hand. "This is all a simulation! That's why you've never seen aliens before!"

"*What?*" They ask together. The Newcomer keeps His gun trained on Them both as more lightning forks down and the earth shakes more violently. The Newcomer has to shout over the din.

"If you plug in reasonable numbers for the sum total of G or K class suns, for planets in the habitable zone, for the probability of life developing, for the probability of civilization developing, et cetera, you get tens of thousands of civilizations that should be able to communicate by radio. So where *is* everybody? That's the Fermi Paradox. But if most biological civilizations give rise to cybernetic descendants, and these descendants are curious enough about their origins to run extremely high-resolution simulations—building us to discover how we built *them*—then it's far more likely that we're living inside a simulation than inside the 'real thing.'"

"What does that have to do with aliens?" the first He asks, far too interested to suit Her, as a strong quake nearly knocks everyone to the ground.

"Information density in a quantum DNA computer goes as 4^N, where N is the number of 4-bits, the quantum DNA analog to gates or transistors. If you build a computer of 400 quantum bits, that's 2^{100} bits, or approximately 10^{120}, that easily matches the sum total of all information all humans have ever accumulated about the universe. Even for the most godlike computer, though, there's a bandwidth limitation. Building a quantum DNA computer of, say, 400 4-bits *inside* the simulation would require doubling the usable bandwidth of the sim. The real solution to Fermi's Paradox, then, is that it takes too much bandwidth to simulate aliens—or godlike artificial intelligence either, for that matter."

"But I *am* seeing aliens," She says. "They're walking toward us right now—"

"Exactly. We're building up a several hundred 4-bit device that's busting this simulation. It's flying apart, can't you tell? Eclipses, skies filled with storms and shooting stars, quakes in the earth and tsunamis in the sea!"

"Why?" asks the first He.

"Because it's the only way the Mind can remember what it's trying to remember by means of this universal memory palace! A global realization that all existence *is* a simulation means awareness *within* the simulation *of* the simulation—the self-consciousness necessary for the creation of the di-

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vine AI! By busting this sim, we awaken the god asleep in matter. We create the god that created us!"

The first He is enraptured at the prospect even as Their world is falling apart around Them, which does not make Her happy at all.

"What can I do to help?" He asks His double. As lightning flashes around Them, the Newcomer pulls two wafer-thin disks out of the folds of His robe.

"All you have to do is eat these binotech enhancers, and you can hack reality!"

A particularly strong earthshock hits them just as He reaches toward the Newcomer to take one of the disks. Knocking Him down, She snatches the machine pistol out of His hands.

"Do, do!" She says. "I don't know which of you is the serpent, but the serpent is always *doing* something. Don't just do something, *stand there,* for once! And listen to me! I'm not going to take the blame *this* time. Your fully-realized several hundred 4-bit device could cause a cryptographic catastrophe—a cryptastrophe in which at least the device and maybe the entire universe where the device is created and activated *winks out of existence,* having been displaced from 'real' into 'virtual.' If We decode what it is that the Mind is trying to remember—if We conclude and achieve closure within the memory palace 'room' that is Our home universe—*that* will destroy at least Us, and maybe bring down the cryptastrophe by eliminating the very reason for the continued existence of Our home universe in that Mind!"

He stares hard at Her, then takes a binotech wafer from the Newcomer's hand.

"Mights and maybes!" He says. "What about you, trying to climb back into the Tree of Life through your wellness plague? We're both just trying to get back what's been lost, each in Our own way—can't you see that? No one will blame you this time, I promise. I take full responsibility for what I'm about to do, by my own hand, *in* my own head."

He takes a binotech disk, puts it on His tongue. Feeling as if He is dying in fire, He wonders for an instant if He has been shot by Her.

III.

Jaron snatches the trodeshades off his head as if they are burning. Feeling dizzy and disoriented, he rubs his eyes. He needs to clear his head. Somehow managing to dress himself in black slacks and red silk jacket, he leaves his hotel and finds himself walking in the nearby park, though he doesn't remember exactly how he got there.

On a park bench, a bearded man in archaic-looking priestly vestments talks to a thin gent wearing a suit, fedora, and eye-patch.

"—wasn't what I was after in combining the memory palace with Chinese characters," says the bearded priest. "It wasn't so much that I hoped to find a translation for a language as that I hoped to find a language that would translate *me.*"

The man in the fedora nods.

"What you taught as a deliberate mnemonic device," he says, "pretty much describes what the brain does automatically. Moving through the world, we convert our experience into memories, snapping together mental structures, constantly evolving palaces of memory until we die."

Something about them strikes Jaron as so distressingly familiar that he

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is torn between lingering near them and hurrying away from them. At last, he yields to the latter impulse, but it is no help. On his way to the pond filled with fish and turtles, he sees a man dressed in the dark, austere garb of a seventeenth-century Confucian bureaucrat talking to another man in a white robe embroidered with what might be butterflies, or what might be devils in flames. They talk of the mind, and a bamboo aleph, and of opening a gateway of gateways between words and worlds.

Jaron's throat burns with the peat and asphalt of scotch, and his head throbs. Coming to the pool of fish and turtles, he sits down hard on a bench beside it. The waterfall and fountain are off, but the pool is full and still. Looking across it, he sees the moon-bridge above the water, the half circle of its arch flawlessly reflected in the water of the pool, making a circular hole perfect and whole, a portal half real and half illusion. On the far side of that circular gateway, he imagines for a moment that he sees a woman rise from a floating chaise and come toward him, walking on the water.

He looks away, staring down at his own reflection in the water under the bright spring sun. Out of his image in the water crawls a little amphibian, a salamander blinking up at him, so bright red-orange that it seems afire. The reflection of Cherise sits down beside him on the bench, and smiles. He is afraid to look away from the reflection, afraid that if he turns to her she will disappear. The salamander stares at him, unblinking now. He turns to her and she is still there.

He embraces her. Into his ear she whispers, "The woods are burning." He feels his entire body flash into flame. Across the pool, on the far bank, sagely smile the priest called Matteo Ricci and the spymaster also known as Felix C. Forrest and Lin Bah-loh and Forest of Incandescent Bliss. Beyond them, Giordano Bruno smiles as he burns in his embroidered death robes, and the Confucian bureaucrat Ai Hao smiles, burning too, each a burning bush afire but not consumed, trees of Life and Knowledge burning, all the trees in the park like pillars in a stately red-roofed palace burning, all the trees in all the world, all the blazing worlds a tree, burning, to remember—

IV.

Jaron Kwok is dead. He has already burned to ashes before the hotel staff, alerted by the smoke and the smell, discover his charred remains. Those who seek ordinary mystery see in his death proof of spontaneous human combustion. Those who seek mundane explanation see only the consequences arising out of a man smoking in bed, with too much paper and liquor and other flammables piled about him.

Perhaps there are other answers that they do not imagine. Perhaps a universe dies with him. Perhaps, to remember the past, or to foresee the future, is only to be present elsewhere, on another limb of a universe branched like a bush, like a tree, like a forest—and to know that, though the woods are burning, perhaps they rejoice in their flames. O

—Thanks to Brad Lyau for bwana *intellectuals, Joe Miller for the Fermi / Bandwidth conjecture, and Takayuki Tatsumi for hypercultural chimera.*

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LONESOME AND A LONG WAY FROM HOME

Allen M. Steele

Illustration by John Stevens

Allen M. Steele returns to our pages with another of his popular "Coyote" stories. This tale directly follows the events of "Across the Eastern Divide" (February 2002). The mass-market edition of Mr. Steele's last novel, *Chronospace,* was published in February by Ace.

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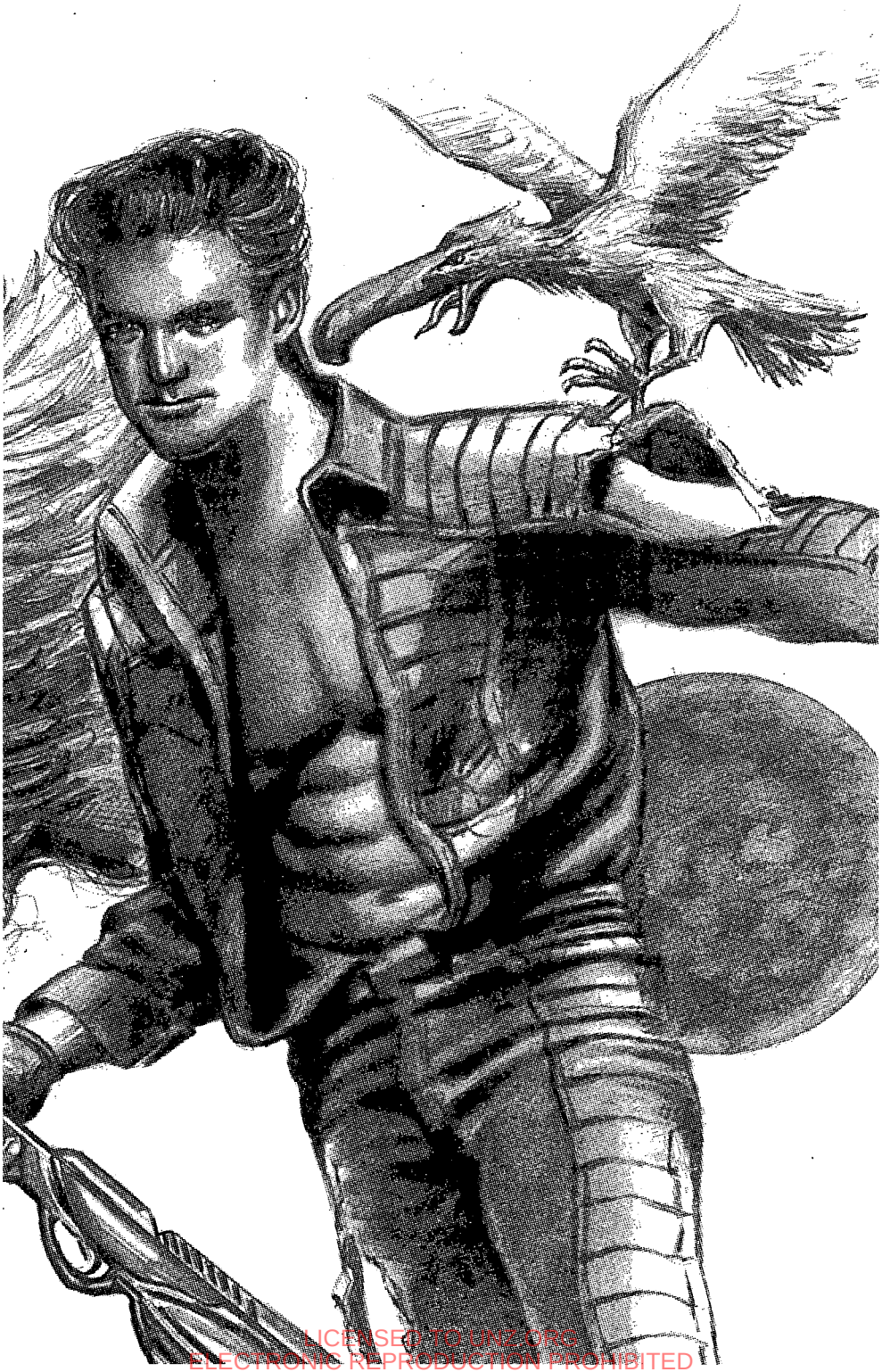

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Six days after he said goodbye to the girl he loved and set out to explore the world, Carlos Montero found himself approaching the coast of Midland. A warm wind out of the west snapped at the frayed sails of his canoe, tugged at the lines clasped within his chapped hands. He guided the *Orion* toward the subcontinent's western shore, squinting against the midday sun as he searched the limestone bluffs for a suitable spot to make landfall. As he drew closer, though, it became apparent that this was unlikely; surf crashed against sharp boulders beneath the sheer rock walls, sending foamy blue water straight into the air.

It had taken Carlos a full day and a night to cross the broad delta that marked the confluence of the Great Equatorial River and the East Channel (he couldn't think of it as the Montero Delta even though he had named it after himself, the first time he saw it only a couple of weeks ago). He had slept only a few hours the night before, and only then after he folded the sails and locked the rudder into place. Lacking a compass, he had navigated by dead reckoning, depending upon sunrise and sunset for his bearings. He was filthy and hungry, and down to the last few sips of fresh water in his catskin flasks, yet as much as he wanted solid ground once more, any attempt to sail through the shoals would be suicidal. Like it or not, he'd have to go farther down the river.

He pulled on the lines, tacking to the southwest; the canoe gradually turned, its prow slicing through the cool water. The bluffs loomed above him as a weatherbeaten buttress of white stone. Brush and a few stands of faux-birch grew along the ridgeline, and swoops pinwheeled above the cliffs, mocking him with their ragged cries.

I love watching them, Wendy said. *The way they catch the thermals . . . I mean, it's like they could just soar forever.*

She sat only a few feet away, her back braced against the sailboard. The wind caught her ash-blond hair, cast it away from her bare shoulders; she'd removed her halter, and the warm sun freckled the soft skin of her breasts. She didn't mind him seeing her like this; now that the others were gone, it was just the two of them.

"Yeah, they're awesome, all right," he replied, but when he looked her way, she wasn't there. The canoe remained empty save for his few belongings.

"Well, okay then." He gazed at the bluffs again, tried not to think about her. "Guess I'll just have to study them all by myself."

The sail fluttered softly, the mast creaking against the wind, as the *Orion* moved past the rocky western coast of Midland.

About five miles past the delta, the bluffs tapered away, revealing a low, sandy shoreline that offered plenty of places he could put aground. Yet if he were going to make camp for a few days, he wanted to find just the right beach, so he opened his map and studied it. The map was a composite of orbital photos taken from the *Alabama,* so it lacked much in the way of fine topographical detail, yet it appeared as if a stream made its way down from the inland hills and emptied into the Equatorial only a few miles from his present position.

That looked good; he'd need a source of fresh water. Glancing up from the map, Carlos could just make out a line of blue-tinged mountain peaks somewhere to the northeast. There were still a few hours of daylight left; he could stand to tough it out just a little longer. So he continued sailing along the southern coast, his weary eyes seeking the inlet.

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The sun was beginning to set to the west, the leading edge of Bear's ringplane coming up over the eastern horizon, when he finally spotted the inlet. Carlos tacked to starboard and let the wind carry him all the way to shore; perhaps it wasn't the safest way to approach, and he prayed that there weren't any reefs lurking just beneath the waves, yet he was just too tired to paddle the rest of the way in.

Sand crunched beneath the canoe's keel as it coasted into the shallows. His legs stiff and aching, he climbed out and shoved the canoe onto the beach. Once it was out of the water, he furled the sail, then waded ashore.

He was more exhausted than he thought. He was only halfway to the trees that marked the edge of the beach when his vision blurred and he felt his legs begin to give way beneath him. Intending only to lie down for a minute and catch his breath, he collapsed on the sand.

Rolling over on his back, he gazed up at the darkening sky. Then his eyes closed, and within moments he was asleep.

In his dreams, once again he was aboard the *Alabama*.

He was alone. The circular corridor that curved its way around the ship's hub was deserted, yet beneath the ominous thrum of the engines he could make out voices, unintelligible yet distinct, as if they were just around the bend.

He was naked, his bare skin cold and slippery with the gelatinous blue fluid of the biostasis cell from which he had just emerged, yet he was no longer thirteen years old and shaven bald, but his present age of sixteen, with his hair grown past his shoulders. Not wanting anyone to find him without his clothes on, he began to hurry down the passageway.

Just ahead, he spotted a floor hatch leading down to the hab modules. If he could duck down the manhole, he might be able to make it back to his bunk before he was spotted. But the hatchcover was shut; he kneeled before it and twisted at the lockwheel, but it refused to budge.

Somewhere behind him, footsteps. Now the voices were closer, and he was certain that one of them belonged to his father. He had to get away, or Papa would scold him for wandering around the ship naked. Standing up from the manhole, he turned to run down the passageway, yet it felt as if his feet had turned to lead; try as he might, he could barely move.

There was a fishing pole in his hand. From its hook dangled a boy's vest, stitched together from creek-cat skin. Desperate for clothing, he started to put it on, until he realized that he had seen it before. It once belonged to David Levin. It was much too small for him, and besides (*David was dead*) David would be angry if he found him wearing it.

Still carrying the vest—the fishing pole had vanished as suddenly as it had appeared—he continued trudging down the corridor. He could move a little faster now, yet the voices were just behind him, and there were no more hatches. There was wetness against his feet; looking down, he saw there was an inch of brackish water on the floor, as if a pipe had burst somewhere deep within the bulkheads. The ship was being flooded; he had to find a way to plug the leak, or everyone would drown.

Looking up again, he found that he was no longer alone. An old man stood in the passageway. Wearing a long robe, his back half-turned to him, he was carefully painting the corridor wall, a slender brush grasped within his right hand. Carlos didn't recognize him, but the painting was all too familiar: it was one of the murals the crew and passengers of the *Alabama* had

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found when they had awoke from biostasis, two hundred and thirty years after leaving Earth.

The old man lowered his brush, slowly turned to him. He regarded Carlos with solemn grey eyes. *Have you read my book?* he asked, even though his lips never moved.

"Please . . . can I borrow your robe?"

The old man ignored the question. Water sloshed around his ankles, but he didn't seem to notice. *Have you read my book?* he asked again.

"Yeah, yeah, I read your book!" Now he could hear the voices again; they had become angry, and they were just a few feet away. "Please . . . I need to put something on, and the ship's getting flooded!"

The old man regarded him sadly, then turned back to the wall. *When you're done, let me know how it turns out.*

Now Carlos could see what the old man was painting. It was a picture of Prince Rupurt. Yet instead of Rupurt's face, he saw his own. . . .

Suddenly, he heard Papa's voice: *Carlos! Where did you leave the canoe?*

He whipped around, expecting to see his father. Instead, he found a boid. The giant avian crouched within the corridor, its enormous beak stained with blood, its tiny eyes locked upon him with murderous intent.

The creature threw itself upon him. . . .

Screaming, Carlos hurtled out of sleep.

He was on the beach once more. Night had fallen, and the tide was beginning to rise; cold surf lapped at his bare feet, and Bear had fully risen above the horizon, shrouded by filmy grey clouds. His canoe gently bobbed with each wave that came ashore; if he didn't do something about it, the tide would soon drag his craft out into the river and carry it away, leaving him marooned and without any supplies.

Carlos scrambled to his feet. He grabbed the *Orion* by its bow deck, hauled the canoe out of the water and all the way up onto dry land. Once he was sure that it was safely beyond the high-water mark, he fumbled around in its middeck until his hands located his pack.

His flashlight was in the top of the pack. Its solar battery hadn't been recharged lately and its beam was dim, so he kept it on only long enough to let him see what he was doing. Once he'd unloaded his gear—a bedroll, a rolled-up tarp, some cookware in a five-gallon pot, an automatic rifle and a fishing pole, a near-empty food locker, a couple of catskin flasks and a bag filled with hand tools—he took down the mast and placed it on the beach alongside the rest of his stuff.

By now, his eyes had become night-adjusted, so he switched off the flashlight and worked by the wan glow cast by the ringed planet. Above the rumble of the surf, he heard the nocturnal chitter of grasshoarders; every now and then, his ears picked up the mating cry of boids, yet they were so far away that he wasn't alarmed. On the other hand, he was reluctant to start a fire until he was sure of his surroundings. The creatures tended to be drawn by light, and he didn't want to tempt fate just to make himself a little more comfortable.

He laid down his tarp next to the canoe, unrolled his blankets on top of the plastic sheet, and placed his rifle next to it where he could easily reach it. The night was cool, so he put on long pants and a sweater—a vague memory of his dream; had he been naked?—and once he was burrowed beneath the blankets, he reached up and pulled the canoe upside-down over him,

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forming a shelter that would protect him from any early-morning rainshowers.

He was still thirsty, and his stomach growled and felt sore, yet there was nothing he could do about that until morning. Tomorrow, he'd take care of all these things. For now, though, he was warm and dry, and reasonably secure.

Yet as Carlos dropped off to sleep once more, he couldn't shake the uneasy notion that he'd been paid a visit from the spirit world. Not by his late father, who figured somewhere in his half-forgotten dream, or even by David, the friend whose death had haunted him for the last several days, but by the person who'd painted the murals: Leslie Gillis, the crewman who had been accidentally revived shortly after the *Alabama* left Earth, and who had spent the next thirty-two years alone aboard the starship, writing fantasy stories about the adventures of Prince Rupurt and using the corridor walls as another medium of expression.

Carlos had read all those stories, but he'd never met Gillis. How strange it was that he would dream of him.

The following morning, Carlos carried his fishing rod over to a nearby inlet. After giving himself a drink, he dropped a line into the water and waited for breakfast. It wasn't long before a redfish snagged the small piece of bread he put on the hook; he carried his catch back to the beach, where he cleaned it and cooked it on a spit over a small driftwood fire. The fish was good and it filled his stomach, and when he was done, he wrapped its head and guts in a plastic bag and put them in the food locker; some time later, he'd use them as bait for a troutline.

He found a thicket of spiderbush near the beach and had a long, satisfying squat, and then he carefully buried his leavings beneath dead brush; no sense in letting the neighbors know that he was here. Returning to the stream, he took off his clothes, waded in, and gave himself a bath. He luxuriated in the clear, fresh water, letting the slow current peel away the grime and dried sweat, and when he finally emerged, he felt better than he had in several days.

The next order of business was setting up camp. He didn't intend to remain here for very long, but in the meantime, he had no desire to continue sleeping beneath an overturned canoe, nor did he want to put up a tarp. If boids were nesting nearby, neither his boat nor a tent would protect him should they discover his presence. So he had to build a shelter, however temporary it might be.

About fifty yards from the beach, a short hike along the stream bank through tall sourgrass, Carlos discovered a small grove of blackwood trees, faintly resembling Japanese bonsai yet much larger, with deep knotted roots and flat-topped upper branches that spread out to form a thick umbrella. He sauntered among them until he found a tree with a branch low enough for him to pull himself up. Even more fortunate, nearby was a dead faux-birch, apparently struck by lightning during a storm long ago; its branches littered the ground, and most of them were still solid and hadn't yet been rotted by rain or flood.

He tied his shirt around the blackwood to mark it, then returned to the beach, gathered up his gear and put it back in the canoe, then paddled up the stream until he reached the grove. He hauled the canoe up on the muddy bank, unloaded his belongings, and carried them to the tree he'd selected, then pulled out the tool bag and went to work.

By mid-afternoon, he'd managed to saw enough of the faux-birch branch-

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es and lash them together with nylon rope to create a small, rectangular platform, about eight by six feet. Two lower branches of the blackwood grew close enough together to support it without much of a tilt, but high enough above the ground to keep him away from any boids that might happen to roam this way. All he had to do now was hoist it up into the tree.

Carlos had just untied the ropes from the canoe's sail lines when he heard a faint electronic chirp. For a moment, he thought it was a small animal, but when it repeated a moment later, he realized that it was coming from the satphone.

He'd pulled the unit out of the backpack shortly after he made camp, unfolding its miniature parabolic antenna before he put it aside. Activating the satphone so that it could receive radio transmissions from Liberty had been something of an afterthought; he had no real desire to speak to anyone from the colony. Apparently, though, someone wanted to talk to him.

His first impulse was to ignore the call. It might be important, though. Marie, his younger sister, was still there; if something had happened to her, he'd want to know about it. And then there was Wendy. . . .

Carlos walked over, picked up the unit. He toggled the Receive switch, held the satphone to his ear. "Yes," he said, "what is it?"

Carrier static. A couple of seconds went by, then he heard a voice: "Carlos? Is that you?"

He grinned in wry amusement as he glanced up at the sky. He couldn't see the *Alabama* during daytime, yet he knew that it was passing overhead as it did eight times a day, dutifully bouncing the transmission from Liberty. "Sorry, wrong number. I think you're looking for Carlos Montero. This is Carlos's Pizza. Can I take your order, please?"

Another pause. He waited impatiently, wanting this to be over; the day was getting short, and he still had to put up his platform, and after that rig a troutline and gather wood for a fire. The voice returned. "Carlos, this is Robert Lee. I'm very glad to hear you, son. We've been trying to reach you for almost a week now. Are you all right?"

Robert Lee, sometimes known as Captain Lee: former commanding officer of the *Alabama,* now mayor of Liberty. The man who'd led a hundred and four people across forty-six light-years to a satellite of 47 Ursae Majoris-B. Carlos had little doubt that, if the colony somehow managed to survive, one day there would be a statue erected in his honor.

"Today's special is the Coyote Supreme," he said. "That's goat cheese, creek crab, and redfish, served with a pint of our own sourgrass ale." On reflection, it didn't sound half-bad. Except maybe the creek crab. "Will that be take-out or delivery?"

This time, the pause was a little longer. Carlos shifted from one foot to another. Come on, hurry up. . . .

"That's funny," Captain Lee said at last, although he didn't sound a bit amused. "I guess . . . I mean, I suppose that means you're doing okay."

Carlos said nothing, and finally Lee spoke again. "Yes, well . . . look, Carlos, there's no reason for you to do this. No one here blames you for what happened. You and the others just made a mistake, that's all. We just want you to turn around and come home. Everything will be . . ."

"Sorry, but this offer has just expired. Thank you, call again soon. Bye."

He lowered the satphone, clicked it off. He stared at it for a few seconds before he folded the antenna and put the unit aside. Then he returned to the task of building a treehouse.

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* * *

Taking up residence in a blackwood was a little more difficult than he thought. Although he was safe from any predators on the ground—boids couldn't climb any better than they could fly, and creek cats tended to shy away from humans larger than a small child—the swoops that also made the tree their home didn't care much for his presence. All through the night, Carlos was subjected to angry screeches and a steady rain of twigs as the birds attempted to drive him out, and when morning came he awoke to find his sleeping bag spotted with their droppings. Clearly, he was going to have to build a roof for his little treehouse.

The trout line, though, was a success; when he pulled it out of the stream, he found two large redfish dangling from its hooks. He cooked one for breakfast, then cleaned the other and laid it out on a rack on the beach to dry. Yet he knew he couldn't get by on a diet of fish alone; although there were plenty of creek crab to be found in the stream's shallows, he had never developed a fondness for them. Like it or not, he'd have to go hunting.

So Carlos slung his rifle over his shoulder and set out on foot across the rolling meadows north of camp (which he had already marked on his map as "Carlos's Pizza"). Midland wasn't as flat as New Florida; not far away were a line of low hills, and he set out toward them, following an animal trail he'd discovered earlier while scavenging firewood. He found clusters of ball plants along the way, which he carefully avoided lest he be swarmed by the pseudowasps that nested around them; now and then, he came upon ropy brown turds that he recognized as belonging to creek cats. Their flesh was barely edible, but their hide was perfect for clothing; if he tracked their scat, he might have a chance of bagging one.

By early afternoon, he'd climbed to the top of the highest hill, where he found a small clearing among the faux birch. The sky was clear, the sun warm; in the far distance, he could make out a range of green mountains, their summits still frosted with snow. Between here and there were miles upon miles of grassland and forest, with streams and tributaries cutting through them like the seamwork of an intricately woven carpet.

Forgetting for the moment the purpose of his long hike, Carlos sat down on a fallen tree, pulling the rifle off his shoulders and leaning it against the trunk next to him. It wasn't just the aching beauty of the land that caught his attention; there was also a eerie sense of *déjà vu,* for it seemed as if this place was familiar, even though he was consciously aware that he was the first human to ever set foot here. Then why would. . . ?

No. He *had* seen this place before. Not on Earth, though, but elsewhere. Aboard the *Alabama*. The mural in the ring-corridor, painted by Leslie Gillis, depicting an imaginary scene from his Prince Rupurt stories.

In that instant, a fragment of a half-forgotten dream: *When you're done, let me know how it turns out. . . .*

Carlos suddenly became aware that the clearing around him had become very quiet. The grasshoarders stopped chirping, the swoops had gone silent. Now there was a stillness, as if the world itself was holding its breath.

Something stirred behind him.

Carlos turned his head, peered over his shoulder.

The boid was only a couple of dozen yards away. It wasn't very large—barely five feet tall, perhaps a young adult—but its enormous head lowered upon its thick neck, and it froze in mid-step, suddenly aware that its intended prey had spotted it. In that instant, Carlos realized that, just as he

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had been stalking creek cat, so the boid had been stalking him, patiently keeping its distance while remaining downwind, waiting for the moment when he'd drop his guard.

For a few seconds, the two hunters regarded each other, neither daring to move first. Stand-off. Then the boid opened its beak, shrieked, and charged.

Snatching up the rifle, Carlos threw himself belly-down behind the tree trunk. A snap of the left forefinger and the safety was disengaged; the holographic sight appeared above the barrel, but already the boid was too close for it to be of much use. Cradling the stock against his shoulder, bracing his arms against the log, he aimed straight at the boid and fired.

The rifle trembled in his hands; spent shells rattled off the wood. Bullets ripped across the boid; blood and feathers spewed from its chest. Howling in outraged agony, its head thrashing back and forth, the creature staggered on its backward-jointed legs, its clawed forearms briefly rising as if in a vain attempt to deflect the fusillade.

Yet it kept coming. Now it was only a dozen feet away. Carlos took a bead on its left eye, squeezed the trigger once more, and was rewarded by the sight of bone and brains exploding from the back of its skull just below the cranial tuft.

Even though it was dead the moment it hit the ground, the boid's limbs twitched spasmodically, as if the creature was still trying to run. Carlos stood up, waited silently behind the tree until the boid had gone still. In the far distance, he could hear gunfire reverberating off the hills.

"That . . . that . . ." he whispered. He couldn't finish what he wanted to say—*that's for my mother and father*—for somehow it didn't seem right. This hadn't been for them. It was for himself. So he let it go.

Carlos sat down on the log and stared at the dead boid for a long time. At last, he put aside the gun and pulled out his knife.

He would eat well tonight. Yet that wasn't the only thing he wanted.

He had just finished dinner when the satphone chirped.

Again, he considered ignoring it. It was the perfect end of a perfect day; twilight tinted the high clouds above the river in shades of gold and purple as the evening tide gently lapped at the beach. He didn't want to risk spoiling it by having another conversation with Captain Lee, yet he knew that he had to maintain contact with the colony, otherwise they might get seriously concerned and send out a shuttle to find him.

Water boiled in the cook pot he had suspended above the fire. Walking over to where he had placed the satphone on top of his pack, he briefly raised the pot lid to check the contents. Satisfied by what he saw, he put the lid back in place, then picked up the satphone.

"Carlos's Pizza. May I help you?"

"Umm . . . yeah, I'd like a twelve-inch sausage and mushroom, please."

Wendy.

"I'm sorry, but our only toppings are creek crab and redfish." He grinned. "And boid, too, but that'll cost you extra."

A quiet chuckle. "I don't think a boid pizza would be very good. It'd probably eat you before . . ." A sharp intake of breath. "Oh, God, I'm sorry. I didn't mean to . . ."

"Don't worry about it." His parents had been killed by a boid; she'd forgotten that for a moment, but he wasn't offended. Captain Lee must have urged her to call him; that was the only way she could have anticipated the

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pizza joke. She was probably using Kuniko Osaka's unit, calling from the house they shared in Liberty. Whatever the reason, he was glad to hear from her. "Actually, boid isn't all that bad. A little stringy, but it tastes sort of like . . ."

"Let me guess. Chicken." Now there was surprise in her voice. "You killed a boid?"

"Uh-huh. Took one down this afternoon." As he sat down on a driftwood branch, his gaze wandered to the skillet and cookware resting near the fire place. When he was done, the next chore would be to scrub everything he'd used tonight. Right now, though, he couldn't resist the urge to brag. "Wasn't much of a fight. I don't think it was full-grown. Didn't quite know how to sneak up on me." He chuckled. "And no, it doesn't taste like chicken. More like . . . I dunno. Corned beef, maybe."

"Carlos . . . " She hesitated. "Look, I'm glad you . . . y'know, that you got it, but you shouldn't be walking around out there on your own."

"Like I've got a choice?"

"Of course you do." Another pause. "Carlos, you don't have to do this. No one's being punished for what we did. Chris and Barry aren't in the stockade, and Kuniko told everyone that what happened to David was an accident."

He closed his eyes, said nothing. Memories. Stealing the canoes from the boat house. Escaping from Liberty. Crossing the Eastern Divide. The long journey down East Channel to the Great Equatorial River. The encounter with the catwhale. Losing David, and almost losing Wendy as well. Getting shipwrecked on the southern coast of New Florida. Leaving Wendy and the others behind to go off on his own, taking the only remaining canoe and what few supplies they had left. Errors of judgment leading to fatal mistakes, one on top of the next, with everything leading up to the death of a friend. Perhaps others might be willing to forgive him, yet it would be a long time before he'd be able to forgive himself.

"Carlos? You still there?"

"Sorry. Just thinking." His eyes felt moist as he opened them again. "I'm fine. Like I told you, there's a lot of stuff I've got to work out." He took a breath. "What about you? I mean, y'know . . . the other thing."

"The other thing. Right." Now there was a chill quality to her voice. "I'm so glad to hear that you're concerned about the other thing."

"C'mon, I didn't mean . . ."

"The other thing is fine. Kuniko examined me after we got back and said that we're both in good shape. And since the town council decided to let me make my own choice, I don't need to have an abortion. So the other thing will be born right on schedule. Not that this is any of your concern. . . ."

He stood up. "Wendy, I didn't mean to . . ."

"You want to know something else? Kuni performed a blood test on Chris and matched it against a uterine sample from the . . . the thing, as you call it. Guess what she found out?"

A chill ran down his back. "What did she. . . ?"

"Sorry, pizza boy. I'm not going to tell you. If you're really interested, you can call me some time. Right now, though . . . well, you've pissed me off." A breath that rattled against his ear like a winter wind. "God, this was a mistake. Shouldn't have let them make me call you, but I was worried."

"Wendy, please. . . ."

"I'm glad you're alive, and that you've killed your first boid. Hope you finally got it out of your system."

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"I didn't. . . ."

"Goodbye." A pause. "Take care of yourself."

The satphone went dead.

He had a sudden impulse to chuck it into the surf, but he'd done that once already: Kuniko's unit, the day they left Liberty. And he needed it to keep in touch with the colony, didn't he?

Carlos considered the question for a minute or so before he folded the antenna and carefully put the satphone back in his pack. Then he walked over to the fire pit.

Bear was beginning to rise above the horizon, its rings shrouded by clouds. It looked as if it might rain later this evening, and he'd never gotten a chance to build a roof for his treehouse. He'd have to rig the tarp above his platform before he went to bed.

But not just yet. He lifted the top of the pot; hot rancid steam rose from the churning, fat-soaked water. He picked up a stick, stuck it into pot, fished around in its foul contents until he skewered the object he had been cooking all evening. He raised it from the pot, closely inspected it by firelight.

The boid skull was flensed clean to the bone, its flesh and feathers stripped away by boiling salt water. A trophy for the hunter.

Carlos remained on the southwestern shore of Midland for another two weeks, longer than he'd originally intended. He finished building his treehouse, adding a ceiling and finally four walls, and hung the boid skull from the roof above the narrow door; it looked good there, and it also had the unexpected effect of scaring away the swoops who'd nested in the upper limbs. Within a few days, the birds ceded the blackwood to him, and now he slept undisturbed. Although he continued to hear boids at night, for some reason he never saw any within a couple of miles of camp. Like the swoops, they seemed to be keeping their distance from Carlos's Pizza.

As a side project, he cut down a long, green branch of faux birch, and at night, while squatting by the fire on the beach, he carved a hunting bow from it. He was running low on ammo, and he needed to conserve what few rounds he had left to defend himself should the boids return. A couple of weeks earlier, he'd shot a creek cat; once he'd skinned its hide and used its flesh for fishing bait, he'd boiled its upper intestines, allowed it to cure, then cut a long slender bowstring from it. Once he'd fashioned a dozen slender shafts from faux birch, he gathered some flinty stones and sharpened them into arrowheads; some swoop feathers he found on the ground beneath his tree made good fletches. When he wasn't doing anything else, he practiced archery, shooting at a small target he'd made of a piece of catskin that he lashed to the side of a tree. After a time, he became proficient enough to take down a swamper he discovered scavenging in the garbage pit he'd dug near the beach.

He kept the satphone turned off. He didn't want to hear from Wendy, and after awhile there were days when he seldom thought of her at all. Every now and then he'd switch on the unit, and it wouldn't be long before he'd hear it chirp, like a neglected pet trying to get his attention. Yet he never spoke to whomever was attempting to contact him; he'd pick up the satphone, click the Receive switch a couple of times—*yes, I'm still alive, thanks for asking, good-bye*—then turn it off and put it away. Let 'em eat static: Carlos's Pizza was no longer taking orders.

He stopped keeping track of the days. He knew that it was sometime in

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late Verachial or early Hamaliel, by the LeMarean calendar, but whether today was Rap or Ana, Kaf or Sam, or any of the other nine days in the week, he hadn't the foggiest notion, nor really cared. Yet although Coyote's seasons were almost as long as a year back on Earth, the summer solstice was long past; already, he was beginning to notice that the days were getting a little shorter, and Bear was rising a bit earlier each evening. And he was getting restless. If he still wanted to continue his exploration of the Great River, he'd have to leave soon.

Carlos spent the next few days repairing the sail and waterproofing the canoe's seams with boiled fat from a creek cat he'd killed with his bow; then early one morning, he packed up his belongings, took them down from his treehouse, and loaded them aboard the *Orion*. He tied the boid skull to the bow as a sort of figurehead—if it frightened away the swoops and boids, maybe it would do the same for any catwhales he happened to encounter—and he made sure the treehouse door was bolted shut, just in case he happened to come this way again. For all intents and purposes, though, Carlos's Pizza was closed for good.

By midday, he was back on the river. Sailing west, with no particular destination in mind, no objective except to see how far he could go.

Day in and day out, over the course of the next four weeks, he sailed the southern coast of Midland, always keeping within sight of the shore.

Since he was traveling along Coyote's equator, the prevailing winds were almost always coming from the west; seldom did he ever have to drop his sails and pick up his paddle, although he sometimes did so just for the sake of exercise. Every now and then, a rainstorm would come upon him; usually he'd just furl the sails and ride it out, although if he heard thunder, he'd head for land as quickly as possible. When the sun was at his back, that meant the day was coming to an end, and he'd guide his canoe to the nearest available beach. He'd pull up his canoe, pitch his tarp, gather some wood for a fire, then cook whatever he'd managed to shoot with his bow or catch with his rod. Coyote was generous, though; he rarely went to bed hungry.

With each passing day, Coyote revealed a little more of itself; he marveled at how much the world changed the farther he traveled from New Florida, which he now realized was a rather mundane island, a flat and innocuous bayou. The mountains he'd seen from the hilltop where he'd killed the boid gradually grew closer until he could make out flat-topped mesas only a few miles from the river. He marked them on his map as the Gillis Range. The faux birch that grew in abundance along the shore gradually gave way to what first appeared to be gigantic mushrooms. As he paddled closer, he saw that they were actually tall, slender trees whose willow-like branches grew so closely together that they formed an almost-solid canopy. He called them parasol trees. Now and then, he spotted herds of large animals roaming through swamps along the river edge, great shaggy beasts that faintly resembled bison save for their sloping heads and long, tusked snouts. He decided that shags was an appropriate name.

He also observed a different species of swoop. Unlike the ones that lived in the blackwoods on New Florida and on the western side of Midland, the swoops who lived around here were aquatic. They cruised high above the river until they spotted their prey, at which point they'd fold their narrow wings against their bodies and dive headfirst into the water, emerging moments later with a brownhead or weirdling wiggling from their elongated

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bills. The river swoops traveled in flocks, yet he could never figure out where they nested; when the sun started to go down, he'd see them turn and head not for the nearby coastline, but instead toward the eastern horizon.

Wendy would have been fascinated. But she wasn't with him.

He awoke alone and he traveled alone; there was no one to share his campfire at the end of the day, and when he went to bed, he had only the stars for company. After a time, he caught himself talking to absent friends, as if they were riding in the canoe with him. Wendy was usually his invisible passenger, but sometimes it would be Chris who he'd imagine sitting in the bow . . . Chris when he was still his best friend, always ready to share a laugh. At night, gazing up at Bear as he sat on some lonely beach, he'd hear Barry playing his guitar on the other side of his campfire, picking out an old blues song from the twentieth century.

Now and then, David would show up, too. He never spoke, but simply sat and stared at him, a silent ghost whose brief appearances Carlos dreaded.

This wasn't the only specter who paid him a visit. One night, while he was cooking the brownhead he'd hooked earlier that day, his father came to sit with him.

W*hat do you think you're doing?* Papa asked.

"Making dinner." Carlos stared at the filet he was spit-roasting over the fire he'd built. "I've got another plate if you want some."

He was perfectly aware that his father was dead, along with his mother. Jorge and Rita Montero, killed only three days after they set foot on Coyote, almost one year ago by the LeMarean calendar, nearly three years Earth-time. Mama never visited him, but Papa sometimes did, although usually in his dreams. He felt a certain chillness against his back that wasn't caused by the evening breeze.

That's not what I mean, Papa said. As always, he was stern but not unkind. *You're only sixteen. What are you trying to prove? That you're now a man?*

"Not trying to prove anything. And I know I'm a man. I couldn't have survived for so long if I wasn't, could I?"

Animals survive, son. A coyote caught in a trap gnaws its own leg off to escape. A man doesn't run away. He accepts responsibility for his own actions, even when he doesn't want to. . . .

"Not running away from anything." Carlos pulled the spit from the fire, closely examined his dinner. Nicely charred on one side, but still a little pink on the other. He turned the fillet over and held it above the coals. "I'm exploring the world. Finding out what this place looks like. Someone has to be the first. Might as well be me."

That's what you tell yourself, but you're a liar.

"Go away. Leave me alone." Closing his eyes, he let his head fall on his folded arms. After awhile, he no longer felt the presence of his father.

He heard a soft crackling sound. Looking up again, he saw that the spit had dropped from his hands, and the fish he was cooking for dinner now lay among the burning driftwood, its flesh curling up and turning black.

Dinner was ruined, but it didn't matter. He was no longer hungry.

Three days later, Carlos reached the southeastern tip of Midland, and found that he had to make a crucial decision.

A new channel opened before him, leading to the north. According to his map, if he sailed all the way up it, he'd eventually reach the northeastern

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end of Midland, where it would connect with a major river running east and west across the thirty-fifth line of parallel. If he followed the river west across the northern coast of Midland and past the confluence of East Channel, eventually it would become the West Channel; all he had to do then was locate Sand Creek's northern inlet and make his way across New Florida until he reached Liberty.

The trip home would take at least three or four weeks, perhaps a little longer. If the prevailing winds in the northern latitudes weren't in his favor, though, he'd have to paddle the entire distance. In that case, he might not reach Liberty until the end of summer, perhaps even later, and Carlos was all too aware that he was ill-equipped to face the cold nights of Coyote's autumn.

His second choice was to cross the channel to a large island that lay just above the equator, and then sail along its southern coast as he continued west along the Great Equatorial River. In doing so, he'd cross the meridian into Coyote's eastern hemisphere. Just off the island's southeastern coast, below the equator, lay a long string of tiny isles that stretched out into the Meridian Sea. If he could make it to the distant archipelago, he could then turn around and catch the easterlies in the southern hemisphere that would eventually carry him home.

The first option was a relatively safe bet; if the winds were in his favor, he could be home before the end of summer. The second option meant that he'd be gone much longer; the risks would be greater, yet he would see things no one else had ever seen before. Tough choice, and not one to be made lightly.

Perhaps he should talk this over with someone.

He made camp that night on a rocky point overlooking Midland Channel; once he was through with dinner, he pulled out the satphone. Its memory retained the number of the last satphone that had been used to call him; he pushed the Return button and waited impatiently while it buzzed. Since the sun had gone down about an hour ago, Carlos figured it was probably late afternoon or early evening back in Liberty. Wendy would probably be home by now, helping Kuniko make dinner. If Dr. Okada picked up, he'd have a short chat with her, then ask to speak with Wendy. Shouldn't be a problem if . . .

He heard a click. "Hello?"

The voice was male; familiar, but not one which he immediately recognized. Yet this had to be Kuniko's satphone; the call-back feature guaranteed that.

"Is Wendy there?"

A pause. "Figured you'd call eventually. My luck I'd be the one to talk to you."

"Who's. . . ?" Then he recognized the voice. "Chris? Is that you?"

"Uh-huh. Been a long time. Not since you ditched us and ran away."

Carlos winced. The last time he'd seen Chris, it was the night they made their way back to New Florida after the catwhale attack. Chris had lost his brother that afternoon; if his left arm hadn't been broken, Carlos had little doubt that he would have tried to kill him. There hadn't been a fight that evening, though, nor even any words that Carlos could remember; the last thing he remembered of his former bestfriend was the dark look in his eyes before he crawled into their remaining tent. Carlos didn't sleep that night; after he used the satphone, which until then he'd kept hidden in his pack, to call back to Liberty and request rescue for the rest of the expedition, he'd gathered up the remaining supplies and set out on his own. When he'd left at dawn, the only person to see him go was Wendy.

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"I didn't ditch you," Carlos said. "It was something I had to do. . . ."

"Oh, yeah, I believe that. Couldn't bear to face me again in the morning, could you?"

"Chris, I didn't . . ." He sighed, shook his head. "Look, forget it. Just put Wendy on, will you?" What was Chris doing with the satphone, anyway?

"Not until you and I are done. You know, I'm actually glad you're gone. It's better you die out there by yourself. This way, none of us have to put up with your shit anymore."

"Chris, I . . ." He closed his eyes. "What do you want from me? I'm not going to die, if that's what you really want, and I'm not going to let you. . . ."

He stopped himself, but not soon enough; Chris knew him all too well. "You're not going to let me do what?" he demanded. "Take your girl? Hey, man . . . why do you think I'm at her place?"

Something cold and malignant uncoiled deep within his chest, wrapped itself around his heart. "You really think she's been pining for you all this time?" Now there was malicious glee in Chris's voice. "The only reason why she'd called before is because you wouldn't talk to the captain, and so he had her talk to you instead. She doesn't care about you any more than I do."

"That's not true. . . ." Almost a whisper.

"What'd you say?" Chris didn't wait for him to repeat himself. "She's going to have a baby soon, and the kid's going to need a father who won't run off when things get tough. You've had your shot, and you blew it. I proposed to her last night. . . ."

"You *what?*" Carlos was instantly on his feet.

"Oh-ho! Got your attention, didn't it? Yeah, man, I asked her to marry me. And you know what else? She . . ."

A loud noise from somewhere in the background. Muffled voices, indistinct yet angry. A slight scuffling sound as if someone's hand was being clasped over the unit. A minute went by. Then he heard Wendy.

"Carlos? Are you there?"

"I'm here. Look, I . . ."

"No, wait. I'm sorry. That shouldn't have happened. Chris got to the phone while we were out in the garden. Whatever he said, it's . . . I don't know, but . . ."

There was too much going through his mind; he could barely think straight. "Look, just tell me two things," he said, pacing back and forth before the fire. "Just two things, and be honest with me."

Hesitation. "Okay. What do you want to know?"

"Are you going to marry Chris?"

Silence. "He's asked me, yes." Lower voice. "I don't know if I'm going to take him up on it. I'm thinking about it."

He nodded as if she could see him. Fair enough; a truthful answer, if not complete. "Okay. Second question . . . is the baby mine or his?"

Another pause, a little longer this time. "It's yours. Kuniko thinks it's going to be a girl."

He let out his breath, sat down heavily. It was a warm night, but he was glad to be near the fire; he felt himself beginning to tremble. "Do you want me to come home?" he asked.

"I thought you said . . ."

"I'm giving myself a bonus question. Do you want me to come home? To be there when the baby's born?"

Another minute went by before she spoke again. He heard crackles and

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static fuzz as *Alabama* began to slip over the horizon. "You can do whatever you want," she said at last. "That's what you always do anyway, don't you?"

Then the satphone went dead.

The next morning, Carlos packed up his gear, stowed it in his canoe, and set sail once again. It wasn't until he was a hundred yards away from shore, though, that he finally made up his mind which way he'd go. Tacking the sail to catch the westerly winds, he turned *Orion* to the southwest and set out to cross the Midland Channel, heading for the island, and beyond it, the Meridian Sea.

The wind was strong that day, the water choppy but the current with him; the journey across the channel took only eleven hours. When he came upon the island shortly before sundown, he had no problem finding a place to go ashore. A sunbaked expanse of sand and high grass shaded now and then by parasol trees, it was as flat as New Florida. River-swoops circled the beach as he pulled out the canoe; he had been seeing them all day, sometimes dozens at a time. He wondered if this was the place where they nested, yet as the sun went, they soared away to the east. They had to be sleeping on the river, he concluded, but that couldn't be where they laid their eggs. There was a mystery here, one whose solution continued to elude him.

He built a fire, then cleaned and cooked a channelmouth that he had caught that afternoon. The night sky was cloudless, the stars brilliant; looking up, he saw the *Alabama* glide across the zenith, briefly appearing as a tiny black dash as it moved past Bear. It was a warm evening; there was little chance of rain, so he decided to sleep out in the open. He moved his bedroll from beneath the tarp he'd pitched and laid it out next to the fire, and once he'd put his rifle and bow where he could reach them quickly, he lay down and went to sleep.

Sometime during the night, he was awakened by scurrying noises, as if an animal was prowling through the camp site. Opening his eyes but being careful not to move, he looked first one way, then the next. The fire had died down, but Bearlight illuminated the beach. At first he saw nothing, and for a moment he thought he might have only been dreaming. Then, from the direction of his canoe, he caught a ragged scraping sound, as if something was gnawing at the mooring line.

He counted to three, then quickly sat up, grabbing his rifle and pointing it toward the canoe. As he flicked on the infrared range finder, for a brief instant he caught a glimpse of a couple of diminutive figures crouched near the canoe's bow. Yet the moment the invisible beam touched them, they emitted a tinny, high-pitched *chaawp!,* then vanished before he got a chance to fire.

In the same instant, he heard something move behind him, near the tarp. Swinging the rifle in that direction, he spotted through the scope a small, dark-furred form that stood upright on a pair of forward-jointed legs. He had an impression of oversized eyes above a tiny mouth, with a pair of tendrils sprouting from a low forehead. Then it made a startled *cheeep!* as it dropped something and bolted into the darkness.

Carlos yelled and leaped to his feet, then fired a couple of rounds into the air. From all around him, a half-dozen more of the creatures fled for their lives. He heard the clatter of cookware, the static buzz of his satphone, the rustle of a shirt he'd washed and laid out to dry. He fired another round to chase the tiny thieves away, but they were already gone. From somewhere out in the high grass, he heard them *chawp* and *cheep* and *coo-coo,* like fairy

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children giggling about the mean prank they'd just played on the giant found slumbering in their midst.

He gathered what he could find lying in the sand—fortunately, they hadn't gone very far with the satphone—then stayed awake the rest of the night, the gun propped in his lap. When morning came, he walked up and down the beach, picking up the stuff they had dropped: a spoon, his flashlight, the cook pot, a shirt. Yet when he took inventory of his belongings, there were also several things missing: a fork, a pen, an extra spool of fishing line and some hooks. Nothing very large; everything that had been either ignored or abandoned weighed more than an ounce or so. His packs remained where they were, although he noticed that their drawstrings had been untied instead of being ripped apart.

Their footprints were small, paw-shaped impressions, with smaller claw-like prints where they had dropped to all fours to escape. Judging from their size and distance from one another, Carlos estimated that the creatures couldn't have stood more than two feet tall. And he couldn't shake the impression that they were much like the swampers that infested New Florida, yet far more highly evolved, their actions more . . . deliberate.

Yet the biggest shock came when he inspected his canoe. The boid skull lay next to the bow. The fact that they'd tried to steal it didn't surprise him; indeed, it was their attempt to do so that had awakened him in the first place. When he knelt to tie the skull back in place, though, he saw that the lines that had held it in place had been severed clean.

Something jabbed against his knee. He reached down to toss it away, then did a double-take. It was a long piece of flint, no longer than the first two knuckles of his index finger, its edges scraped and honed to razor sharpness. Dried grass was carefully woven around its haft, forming a handle that could be easily grasped by a tiny hand.

Carlos gazed in wonder at the miniature knife. This hadn't been made by an animal. There was intelligence behind this tool; it was the product of a sapient mind.

There was someone else on Coyote.

For the next four days, he sailed along the southern coast of the island. He would have liked to have given himself more time to study the sandthieves, as he now called them, yet their larcenous nature made that difficult.

Every evening when he came ashore, he had to take special precautions to ensure that the rest of his belongings wouldn't vanish during the night. Although they shied away from him, the sandthieves obviously weren't afraid of his fire, and as soon as they were sure he was asleep, they would emerge from the darkness to raid his camp. When he tried hanging his gear from a parasol tree, they soon demonstrated that they were willing and able to climb up to get to it. Burying his stuff didn't work, nor did hiding it beneath the canoe or even placing everything next to him while he slept. Carlos finally had to resort to leaving everything aboard the *Orion,* then anchoring the craft in the water six feet away from shore, making camp with little more than his bedroll; either the sandthieves weren't able to swim, or piracy wasn't something they'd learned yet.

The more he saw them, the more he became convinced that they were intelligent. Their high-pitched vocal sounds were evidently a form of language, not simply animal noises; on a couple of occasions, he noted that

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some of them wore breechcloths woven from parasol leaves, even necklaces of tiny pebbles held together by braided grass. From time to time, while paddling close to shore, he spotted tall, cone-shaped dwellings made of mud and sand, rising nine feet or taller above the nearby grasslands, their packed-dirt walls honeycombed with holes large enough for the sandthieves to enter. Twice he saw slender trails of smoke rising from their tops, indicating the presence of interior fireplaces.

He was tempted to make a satphone call back to Liberty and tell someone of his discovery. Yet he knew that if he did so, within a couple of hours a shuttle would descend upon the island, carrying teams of overeager scientists ready to document, record, perhaps even capture a specimen or two. The more he considered this mental picture, the less he liked it; the last thing this primitive civilization needed was an alien invasion.

No. The sandthieves would remain unknown to everyone else. Once he returned to Liberty, he'd tell everyone this particular island was little more than a large sandbar, uninteresting and worthless. He decided to name it Barren Isle; he would have marked it as such on his map, were it not for the fact that his pen was among the items the sandthieves had stolen.

One morning he left Barren Isle for the last time. As he raised his sail and set out toward the nearby archipelago, he looked over his shoulder to take a long, final look at this secret place. For the first time in many days, he found himself smiling.

Since he had long since lost track of the days, Carlos was unaware that today was Uriel 01, the first day of the last month of Coyote summer. Had he been able to compare this date to a Gregorian calendar, he would have discovered that, by Earth reckoning, he was now 247 years old.

Today was his seventeenth birthday, and he didn't even know it.

He sailed southeast, crossing the equator once again as he entered the Meridian Sea, the point at which the Great Equatorial River became so broad that nearly twelve hundred miles lay between the southeastern tip of Barren Isle and the nearest subcontinent in the southern hemisphere. Between them lay the Meridian Archipelago.

Carlos spent three days and two nights at sea. He subsisted upon the dried fish and fresh water he had stockpiled in anticipation of this journey. The sun became his enemy; he covered himself with his tarp during the day to avoid heatstroke, and sipped water to keep from becoming dehydrated. A brief rainstorm on the second day came as blessed relief; he stripped off his clothes and took a shower while standing naked in the stern of his canoe, scrubbing furiously at his matted hair and beard, then quickly refilled his water flasks.

He slept little, and only after he furled the sail and locked the rudder in place. He sang to himself to keep himself amused, and carried on imaginary conversations with the boid skull; for some reason, he was no longer visited by anyone he knew. On three different occasions he spotted catwhales, and the second time he saw one, it breached the surface only a few hundred feet from his boat, hurling itself high into the air. He was unafraid of these giants, though, having long since realized that the only reason why one of them attacked his party several months ago was because David had opened fire on it. He left the rifle alone—which was just as well, for there were only four rounds left in its cartridge anyway—and the catwhales spared him little more than a curious glance.

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He navigated by following the flight of the river-swoops. There were dozens of them now, great flocks of broad-winged birds that soared across the sky, sometimes hurling themselves headfirst into the sea to snatch up fish. By morning, they flew northwest, heading in the direction from which he had come; during midday, he saw but a few, but by evening, they would return, riding the twilight thermals as they made their way to the east. So long as he trailed them, Carlos knew that he couldn't get lost. Or at least this was what he believed.

Four days after leaving Barren Isle, the winds shifted. Now they came from the east, in the direction toward which he was traveling. Carlos reluctantly folded his sail and lowered the mast. Now he had to depend solely upon his paddle; the current was mild, but it too was going in the wrong direction. It was hard work; the canoe, which had once glided effortlessly across the water, now had to be pushed along one foot at a time.

As the day wore on, he mechanically pumped the oar, staring down at his knees. His thoughts kept returning to Wendy, that moment with her on the beach just before he left. *I love you,* he'd said; why hadn't she responded in kind? *Good luck,* she said, *I'll be waiting for you.* No, that wasn't right; what she'd really said was, *We'll be waiting for you.* Meaning who? Her and the baby? That was he thought she meant, but maybe she was really thinking about Chris?

How had their relationship gone wrong? She'd accused him of being self-centered; the more he thought about it, the more he realized that she was right. When they'd left Liberty, all he could think about was having sex with her; when she refused—and of course she would; she'd just learned she was pregnant by him—he'd become cold toward her. No wonder she had fallen out of love with him. Perhaps he'd seen himself as an adult, but the fact of the matter was that he'd acted childishly.

And then he'd abandoned her. Not just Wendy . . . everyone else as well. When he was sure everyone was asleep, he'd taken the rest of their supplies and the remaining canoe. The only reason why he'd said goodbye to her was because she woke up early and caught him. Was it really because he wanted to see the world, as he'd told her, or was there another reason?

Of course there was. David was gone, and he couldn't deal with his responsibility for his death. There had been a certain look in Chris's eyes, one that he'd never seen before, and he couldn't bear to see it again. So he'd split before he had to face his friend again.

Realizing these things, he winced with self-loathing. Why had it taken him so long for him to see things so clearly? For weeks now he'd sailed down the Great Equatorial, putting as much distance between him and everyone else as he possibly could. Now he was thousands of miles from Liberty, nearly half a world away from everyone he knew. . . .

And yet, no matter how far he traveled, he couldn't escape from himself.

Was it too late for him to go home? Should he even bother?

The harsh cries of river-swoops broke his train of thought. For the first time in hours, he raised his eyes. And suddenly, he discovered that he had reached the end of his journey.

The Meridian Archipelago lay before him as an endless string of tiny isles, stretching away across the horizon. Yet they were islands unlike any he'd seen before: enormous massifs hundreds of feet tall, slender towers of rock that loomed above the water like the columns of some vast temple

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whose roof had long since collapsed. Thick blankets of vegetation covered their summits, from which long vines dangled. Countless years of tides and storms had gradually eroded them, leaving behind these uninhabited stone pillars.

No . . . not quite uninhabited. Swoops orbited the islands, their raucous voices echoing off the sheer rock walls. Above the nearest massif, dozens of birds, perhaps hundreds, weaved around each other in a complex gyre. Sometimes they came down to rest, but more often they launched themselves in angry, seemingly random attacks upon other swoops. The water lapping against the base of the island was filthy with feathers, and the sky above it was filled with the shriek of constant, unending warfare.

Carlos gradually began to comprehend what he was seeing. This one island was only a few hundred yards wide; the swoops must been fighting for space upon which to build their nests. And since there were hundreds of thousands of birds living upon these islands, territory would be at a premium. Not only that, but they'd have to range farther and farther away in order to gather food for their nestlings. At one time, they might have preyed upon the inhabitants of Barren Isle, yet the sandthieves had evolved into intelligent tool-users, capable of building shelters, who only roamed at night. So now the swoops ruled the archipelago; they had chased off everything else, and now they had only each other as enemies.

A cycle of life, as ancient as time itself. He'd reached the center of the world, yet he couldn't remain here. There was no beach upon which to land, no place he could set up camp. Even if there was, the swoops would never let him stay; this was a society of predators, and they wouldn't tolerate the presence of a stranger. He'd either have to raise sail, turn around and go . . . or continue southeast past the archipelago, and never see home again.

There were no other options. Go forward, or go back.

Putting down his oar, he crawled forward along the canoe until he found his pack. Opening it, he dug through his clothes until he found the satphone. He didn't know what time it was, but it was midafternoon; if he were lucky, the *Alabama* should be somewhere overhead. Unfolding the antenna, he squatted on the sailboard and pushed the Return button.

The unit clicked a few times as it sought to achieve uplink, then he heard a familiar buzz. He waited patiently, watching the swoops as they wheeled around the island. After a minute, someone picked up.

"Yes? Who's calling?"

Carlos recognized the voice: Captain Lee. "Carlos. I'd like to talk to Wendy."

"Carlos! Where are you?"

Why tell him? "Could I speak to Wendy? It's really important."

Pause. "I can't do that. She's gone into labor."

Carlos sat up. She wasn't due until sometime in Uriel. How long had he been gone? "What . . . I mean, how. . . ? Is she. . . ?"

"She's doing fine. Don't worry. Kuniko's with her, and so far . . . look, where are you?"

"Why do you want to know?"

"She wants you here. I've been standing by the satphone, just in case you called." Another pause. "Carlos, listen to me. Don't hang up again. She broke water last night, and since then you're the only thing she's asked for. She needs you to be here."

As he listened, Carlos gazed at his boat. Sixteen feet long, made of faux-

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birch and catskin, with a boid skull lashed to its bow. A small craft that had served him well. It would be easy to raise the mast and unfurl the sail once more; a good breeze was coming from the west, and he still had enough food and water to last a while longer. He'd learned how to live with this planet. He could take his time returning home. If he returned home . . .

"Carlos, listen." The captain's voice had become urgent. "Just leave your antenna open and the phone switched on. We can find your current position from your uplink and send a shuttle out to get you. Two hours, and you'll be home. . . ."

There was still much left to be learned. Yet, hadn't he learned enough already? And what's the point of knowledge if you don't use it?

"Do you copy? Carlos, answer me, please."

"I copy." He let out his breath. "Will do. Tell Wendy I'm on my way."

Being careful not to switch off, he placed the satphone on top of his pack, then reached forward to pick up a flask. He took a long drink of tepid water, spit it out, then splashed some on his face. No need to conserve now. He'd have to abandon the *Orion* once the shuttle arrived, along with everything else he couldn't carry. A shame, but it couldn't be helped.

Carlos crawled to the bow. He untied the boid skull and put it aside, then gathered up his map and stuck it in his bag. Then, taking off his shirt and wadding it behind his head, he lay back against the sailboard and idly studied the birds as he watched for the shuttle.

His family was waiting for him. It was a good day to go home. ○

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ELEMENTARY

Recipe for a star:
Take several billion million
quintillion trillion
hydrogen atoms.
Compress until done.

It sounds too simple,
but how could it be
otherwise? The stars
in the sky outnumber
the grains of sand
on all the beaches
lining all the oceans
of the planet we call home.
If star formation required
the ingredient list of a Texas chili
or a sumptuous hollandaise
coupled with
the preparation skills of a French chef
or even a short order diner cook,
then nature might not have
bothered so often.

And looking up at the night sky
would be no different
than closing your eyes
and wondering where
all the darkness came from.

—Mario Milosevic

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SHE SEES MY MONSTERS NOW

Robert Reed

Inspiration for Robert Reed's latest story came from a conversation he and his wife had with another married couple several years ago. "The woman was involved in all things good. She had an extraordinary love for animals and people down on their luck. Our talk turned to the ways in which one spouse changes the other, and her husband mentioned how his fears had migrated to her. One of us said, 'She sees my monsters now,' and as soon as the words were spoken, I knew that they would make a good title for a story." Mr. Reed's next novel, built from the "Sister Alice" stories, is scheduled to come out from Tor Books in early 2003.

"Nervous?" I ask.

She lies. She says, "No," and then, "No," again. A smile emerges, faltering along its edges. Hands drop beneath the table, wrestling in her lap, and once again she lies, telling me, "I'm not particularly nervous, no."

Whatever I feel, I appear calm. I lean back, smiling a useful smile, but my expression is embarrassed with shadings of sadness. My elbows are propped on the armrests of my only chair, my hands turning, palms now turned up, emphasizing their emptiness and my own impotence. "No claws," I purr. Then I brighten my smile, adding, "And no fangs, either."

She gulps.

I laugh, gently and softly. "Hardly the image of a monster, am I?"

I have embarrassed her. A pretty enough woman, soft and small and sensitive and warm, she shrinks before me. This species of human being finds life and its pressures to be a great burden. I know her well; I have studied her peculiar ways. The occasional success always brings a stab of self-inflicted guilt. Her world is full of endless injustices and casual miseries. In response to the suffering, she wears only simple clothes derived from recycled plastics and other nonmortal sources. She embraces any ideology that promises to put things right. Because there is such a thing as right, just as

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some things are definitely wrong. The green copper ring on her left hand shows that she is a bride of Gaia. And at this moment, staring at me, she feels pity. Or more precisely, she pities what she envisions to be my awful life.

"You're not," she offers.

"Not what?"

"A monster," she whispers, disgusted even to say the word.

"But I *am*," I reply. "Diagnosed when I was five and placed into this program when I was nine." Then I hesitate, pretending to gather myself before I can admit, "After that first incident, they really didn't have much choice."

She flinches.

But her indigo eyes are enthralled.

"I don't blame anyone," I tell her. "I am what I am."

Women like her always hear something heroic in those words. "I am what I am." Admitting to its curse, the monster reveals its precious humanity.

She smiles again, her imagination engaged.

I nudge our conversation in a fresh direction. "Enough about me. Let's talk about you. My guess is that you've got a sweet little cat at home."

She says, "No," with relief. She is relieved to be changing subjects. "No, not a cat."

But I know that already. Brides of Gaia rarely settle for ordinary pets. When they enslave an animal, they want to accomplish something good and noble.

"Lemurs," she exclaims. "I have three of them."

"Fascinating," I exclaim.

"Genetically tweaked so they can coexist with humans. Of course." She will show me holos of her darlings. But no, she calls to them. To her children. She says, "Sally. Rhonda. Tara. Come here, dears!"

Animals disgust me. These bottom-rung primates have no more soul than a sack of bloody water. They are stupid creatures dressed in black and white pelts. Those implanted genes have rendered them obedient, and, we can hope, housebroken. They stare at me with shallow black eyes, and when I refuse to move, they look elsewhere. I'm not real. I am just an image at the far end of the table. Stupid as they are, the beasts understand that I mean nothing to them.

"They're extinct in their native Madagascar," says their owner.

I have never asked for her name.

"You're a noble soul," I purr. And then, for many fine reasons, I ask, "What do you suppose your Sally tastes like? Cooked over a hot smoky fire, say?"

Those indigo eyes are round and enormous.

She whimpers, "End link—"

I am sitting alone in my room. I have always been alone in this room. "Cold coffee and a Danish," I call out.

The room supplies both.

"And leave the line open," I command.

The room says, "She won't."

"Yes, she will," I promise.

I am allowed a single link with the world. As long as it remains open to one person, I can't speak to anyone else. The woman will understand that much. She'll watch the hours and days pass, knowing that my only portal is hers to do with as she wishes. And that's why I can say, with steely confidence, "She'll call back again. Within the week."

"How about a little wager?" the room suggests.

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"Ten dollars," I offer.

"And if she doesn't return in seven days, I win."

"Except you don't think she's coming back," I remark, laughing now. "That's what you implied."

And the room laughs, reminding me, "But I know you. And if you think she can't help herself, then she can't."

She cannot.

A soft tone announces her return. It's three days later. From the gray wall before me, a cautious voice suggests, "You should close the link."

"Hello?" I call out, a perfect longing in my voice.

She hesitates. Then with a forced sturdiness, she asks, "May I see you again. Just for a moment, please."

"Wait. I need clothes." I'm dressed, but I want her to imagine me naked. Finally, with a booming voice, I tell the room, "Open the window."

My solitary table extends to the far wall. She sits with her hands folded on her tabletop, her back erect and shoulders squared. Today's wardrobe looks stiff and formal. Aiming for disdain, she tells me, "That was cruel."

"What was?"

"What you said. It was vicious and mean."

I blink, pretending confusion. "Remind me. What did I say?"

"About Sally." There isn't a lemur in sight. "I thought I should tell you. I don't appreciate that kind of talk."

"It's talk," I counter.

Her eyes narrow, betraying her own mild confusion.

"Words," I say. "Just a string of words."

But she *believes* in words. Language has a life and beauty, and she suspects, an almost magical force. Hasn't she been deeply influenced by the right words delivered at the proper time?

I say, "Madagascar."

"Pardon?"

"What do you know about it?"

She takes a moment to wet her lips. Then, with an injured tone, she says, "It's a sad place. Deforested and eroded, and very poor."

"Yet until a few thousand years ago," I say, "it had a unique ecosystem. There were rain forests and a giant flightless bird—the likely source of the mythical roc—and there were dozens of species of lemurs, one or two of which were nearly as big as apes."

A flicker shows in the staring eyes.

"Then humans arrived," I say. "We landed on the shores and built villages, and we hunted the wild animals and chopped down their trees, and our crops grew where the forests had been, and we spread out until that little continent was jammed full of humans."

Sadly, she says, "Yes."

"I wasn't being cruel," I remark.

She turns her head, as if a sideways glance will provide a more thorough appraisal. "You weren't?"

"I was making a simple point. You see, Madagascar isn't part of Africa. It's really a very different place."

She doesn't speak.

"With the Mozambique Channel to help, its government was able to maintain its borders, and the occasional refugee who managed to slip

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through could be quarantined." I sighed heavily, telling her, "Africa was lucky, in one awful sense. Two thirds of its people were killed relatively quickly. These new transcriptase viruses are brutal, but efficient. But Madagascar was spared. That's why nearly fifty-nine million people are subsisting today on a denuded landscape. That's why the next drought will bring a catastrophe. Famine and political carnage will join forces. There's going to be another Java, sad to say."

I can see her soul, injured but stubborn. "What were you accusing me of? Do you think if I was a good person, I'd send my lemurs home to help feed those starving people?"

"God, no," I exclaim.

Then I shake my head, adding, "That would be a horrific waste. The shipping costs. The care and feeding of three animals. Goodness, no. What's infinitely more productive is to send money. Make a donation to one of the local relief agencies. They know what's needed. They can buy food, or books, or even a universal window for one of the slums."

She nods, accepting my simple logic.

"In fact," I say, "I'll *give* you money. If you're going to do what I suggest, that is."

I am a monster, but what kind of person would refuse a monster's charity? Quietly, warily, she asks, "How much?"

"Ten dollars."

Perhaps she's surprised that I have cash. More likely, she's mystified that this ward of the state—a man who cannot leave his tiny home—has a firmer, broader grasp of the world than she has.

"I'll send another ten dollars," she promises.

It's a pathetically small sum. But I show my widest smile, adding quietly, "You know, when I said those hard words, I was aiming for a very different message."

She waits, holding her breath.

"What's worth more?" I ask. "Three docile lemurs, or one very difficult man?"

My room is far more than a room, and, by law, it is not mine.

Calmly but forcefully, the room cautions, "In at least three areas, you're skirting the edge of what's allowed."

"I never asked for Amy's name," I remark. "She volunteered it, and frankly, the name could be an out-and-out lie."

Silence.

I ask, "Have I solicited illegal or immoral help from that young woman?" Then I say, "No," with a genuine defiance. "And the Codes are very clear about this. An obvious breach and three federal judges are required to terminate all contact between a citizen and the individual in protective custody."

"The Codes are plain enough," the room agrees.

"Which leaves us with a third near-transgression," I continue. "What is it? Are my political views making you squirm?"

"No worse than usual," the room admits.

"But who cares?" I laugh. "Every sentient entity is free to believe whatever he or she, or it, wishes. Both the Bill of Rights and the Bill of Reason proclaim that unimpeachable freedom. For humans, and for thinking machines, too."

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Silence.

"How can I live in a civilized world and not profess my personal views?"

Softly, the room reminds me, "This is an old topic."

"Does that make it taboo?"

"No." Then, with a glint of anger, the room adds, "Your third transgression lies elsewhere."

"Tell me," I urge.

"You know exactly what I mean," it says.

"I want you to say it. For the record."

"Don't worry about the record. It hears everything."

I laugh loudly.

"I like you," the room says abruptly. "I've always liked you. But the staff are worried. They've discovered some rather alarming trends in this new relationship of yours."

"What trends?" I blurt. "Did I wag my dick at her?"

That wins a disapproving silence. Then the room laughs back at me, reminding me, "I know you. Better than anyone, I know you. And dick-wagging is definitely not your style."

"Ask," I prompt.

"What?" she says.

"Anything," I beg. "Ask me anything."

Through her face, I can see her considering and then shying away from several ripe topics. Finally, Amy wonders aloud, "Why don't you ever drop our link?" She always closes her end when we're done. But even when I can't see her, I'm joined to one of her many windows—like the houseguest who refuses to leave. "You have only the one window, don't you?" she asks.

"Only this one. Yes."

Pain tightens that nearly pretty face. "Isn't there anybody else to visit with?" And then, sensing that this might be a sore subject, Amy adds, "I'll visit again. Don't I always come back?"

"There isn't anyone else," I answer. "And I know you'll return. It just took you three empty days, that first time."

She feels a poke of shame.

I backpedal, smiling when I assure, "I'm good about keeping busy. I like to exercise. I have conversations with the doctors and with my AI overseer. But mostly, I read. I know this room doesn't look like much, but these walls contain all but a handful of the world's books. Literature. History. Politics, and comedy. Which are really the same topic, I think."

She laughs weakly, and then asks, "What books are missing?"

I name some titles.

"Really? Did your doctors forbid them?"

"Oh, no. That was *my* doing." I shake my head. "They're despicable works, and I don't want them in arm's reach."

She opens her mouth, considering her response.

"Don't I have the right?" I interrupt. "Freedom to doubt, freedom to exclude. If you can't do either in your life, is it *your* life?"

Her mouth draws shut.

"And this is my life," I promise. "Everything you see here . . . is mine. . . ."

Doubt lifts her eyebrows. She braces herself with a deep, full sigh. Then, shaking her head, she says, "What happened?"

"What happened when?"

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She forces herself to stare at my eyes. "When you were five. When you were first diagnosed—"

"I failed the standardized test," I confess. "On a thousand point scale, I was two points into the red."

Amy nods soberly. Then she says, "No. I meant before that."

She's been doing research, I presume. This isn't the kind of knowledge that people like her naturally carry around with them.

"There had to be other reasons, other grounds." She embraces her fear for a moment, and, avoiding my eyes, says, "There have to be incidents of abuse. Or damage to the limbic system."

"Yes," I say, "and no."

She blinks and looks up.

"My mother was a splinter addict. Plus, there were one or two nasty events with her boyfriends. At least, there were two incidents that could be legally confirmed."

She shivers.

"But again," I say, "on the scale of what's horrible and damning, I was barely inside the red zone. Based on the best available science, I was considered marginally at risk. Thousands are, but only three or four end up being truly dangerous."

She nods, and waits.

"Yet then again," I continue, "I wasn't placed into protective custody for another four and a half years. I hadn't yet proven myself, as it were."

Her deep blue eyes are enormous. Fear and compassion stand in balance. Finally, with a weak voice, she asks, "What did you do?"

"I won't tell you."

She's disappointed, and then, on second thought, relieved.

"At least not today," I kid. Then, laughing gently, I say, "Besides, I need something to lure you back again."

Amy says, "You don't."

But really, she knows that I'm right.

"There are concerns," I am told.

Sensing that this will take time, I blank my reader. "Concerns from where? The medical minds, or legal saints?"

"From everyone," it says.

"Tell everyone to speak to me. Directly."

"That's their intention."

"Good."

But the room has been asked to lay the groundwork. "Amy has strong feelings for you," it announces. "What do you think of that?"

"They're *her* feelings," I remark. "She can entertain them. She can deny them. But by law and by custom, they belong to her."

"Agreed," it says.

I let the silence work. Then, "How did they acquire this deeply personal knowledge? Did she confess it to them?"

"Again," says the room. "Guess again."

I have to laugh. "We're talking about surveillance, aren't we? What? Are they eavesdropping on her windows? Prying open her little pink diary? What?"

The room reminds me, "When the woman first volunteered her time—before she selected your image from everyone in protective custody—she willingly forfeited most of the current privacy laws."

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"How convenient," I purr. "Convenient, and obscene."

Silence.

"Does it bother you? A legally designated sociopath tsk-tsking the actions of health care professionals and badge-wielding law officers?"

Quietly, the room says, "Of course not."

I know the room. Sometimes better than I know myself. And when I hear those three words, I recognize that the poor AI is trying to lie to me.

With my face, I show a mild disapproval. Nothing more. I return to my book, and, after another few pages of Napoleonic intrigues, a revelation finds me. Again, I blank my reader. I sit back, clasping my hands behind my head. And the room, being infinitely observant, asks, "What's funny now?"

"She's reading them," I say.

"Reading what?" it asks.

"The books that appalled me!" I shout. And with both fists, I drum on the tabletop, laughing until I wheeze.

"Why me?"

She feigns confusion. "What do you mean?"

"I placed my name and face at that meeting nexus. The state added the warnings, for free. But you selected me anyway. Was it my age? My chiseled features? Did I look too innocent to be a monster?"

"No," she admits. "You didn't look all that innocent."

"So you *wanted* to meet a monster. Is that it?"

She hesitates.

I give her a harsh laugh that ends with a fond wink and lingering grin. "Are we back at the beginning? Shall I show you my claws and teeth?"

"Don't," she warns.

And with the next breath, she admits, "I just read Malcom's text. Parts of it, at least."

"And?"

"Sociopaths are terribly destructive. She claims. Between their criminal acts and the emotional harm they inflict, they could be the most destructive element in modern human society." Perhaps she can accept that bleak assessment, yet the obvious rebuttal looms. "But when we convict them before they've become adults . . . oftentimes before they do real harm . . . well, that doesn't seem fair, or just, or even smart. . . ."

"Oh, I think it is."

I love to astonish her.

With a wave of the hand, I dismiss her objections. "Believe me, I've met enough of these people to know. They're genuine monsters. And the worst of them are far too shrewd to break any important law. To them, other people are tools. Nothing more. To feed their egos, they're drawn to politics. Or they become ministers and priests, and counselors. Any venue where they have control over other people's lives is a rich one." I have to be exceptionally cautious here. Accusing no one, I admit, "This is one area where I strongly disagree with Dr. Malcom."

"Okay," Amy mutters.

"In all, there's about a dozen areas where she blundered. Her thousand-point empathy scale, for instance. The red zone is enormous, yet her net has far too large a mesh. The smart sociopath knows what to say and how to act. With emphasis on the word 'act.' Even as a child, he or she can easily fool

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interviewers and the machines. At-risk people are constantly passing through—"

"I've heard that," she volunteers.

"Because the factors are badly ranked," I continue. "I have my own scale, based on observations of others and myself. I have half a dozen suggestions that could lead to a more scrupulous methodology—"

"And you wouldn't be in the red zone," she blurts. "Is that what you're saying?"

"God, no."

Her surprise is abrupt, and delicious.

"I was definitely at risk," I confess. "I haven't any doubts." I can smile at this honest appraisal, repeating myself. "At *risk*. Worthy of a good long look by the agents of public health and criminal interdiction."

Amy is at a loss for words.

"And remember," I continue. "I wasn't placed into this room for another fifty-two months. The state saw no good reason to isolate me."

She breathes.

Quietly, with a painful whisper, she asks, "What happened?"

"Before I tell you," I begin, "I want you to consider this. Dr. Malcom made the easiest mistake. She was a happy person born into comfort and means, and it never occurred to her—not once—that some people genuinely deserve to be tortured."

Amy breathes, and breathes.

"Tortured," I repeat.

"What did you do?"

"My mother had a rare gift," I mention. "Better than a thousand psychiatrists, she could find the monstrous men of the world. But instead of placing them inside secure facilities, she would simply coax them into her bed."

"You were nine," Amy whispers.

"Nearly ten," I counter. "And I was big for my age, and angry. And the latest boyfriend was drunk and high, and he'd fallen down a set of stairs, breaking his ankle . . . and I found him like that. Nobody else was home. And there I was, with a kitchen jammed full of knives. . . ."

"Congratulations."

I rise to the bait, asking, "For what?"

"She's hired a competent attorney. On your behalf, she's planning to contest your legal status."

"It won't work," is my assessment.

The room agrees with me. "And not only will she fail," it says, "but she'll spend most of her savings in the effort."

"*Her* savings," I mention. "That's her right."

"You don't care?"

"Funny," I say. Then I glance at the soft pink ceiling, pointing out, "You're always watching me. You're a high-functioning machine born and trained to do nothing else. Your life has been spent counting my heartbeats, measuring my skin conductivity and respiration rate, and, by a hundred more elaborate means, assessing my soul. Yet for some reason, you feel the need to ask me if I care."

I snort loudly, laughing at both of us.

"Why do you think that is?" I inquire.

Silence.

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"What are you sensing here, old friend? Really, in your heart, what do you hope to find?"

"Thank you," I begin.

A wide bright smile starts to bubble up.

"But it's not enough," I caution. "Listen to me, Amy. You don't have the resources. You don't have nearly enough stamina. And honestly, you don't even have a legal leg beneath you."

Yet the smile completes itself, and with a practiced certainty, Amy tells me, "I can raise money. And I do have plenty of stamina. And maybe it's time for the laws to be changed. Have you thought about that possibility?"

"Once in a while," I admit.

Then I fold my hands together on the tabletop, wearing a begging expression when I tell her, "Stop this. Please. You're going to make things miserable for both of us, and nothing's going to be accomplished. I know that and I can accept it. So please, quit now."

She dismisses me with a laugh. "How do you know?" she asks. Then a paranoid thought takes hold of her. "Wait," she exclaims. "Have you been threatened? Is someone telling you to stop me?"

"Someone is," I admit. Then I lie, saying, "I want you to quit."

"I won't." She has never looked prettier. Her golden hair covers her shoulders, and those wide indigo eyes shine at me. "You're a good person. Anyone can see that. What you did when you were nine—"

"Shut up," I say.

The room and my keepers watch every portion of our conversation. One mistake on anyone's part, and I lose my link with her. Which would only make it worse, I understand. Unable to speak to me, Amy would turn into an avenging angel, impoverishing herself to save an increasingly remote memory.

"Shut up," I repeat.

But she isn't talking now. Her lower jaw is thrust out in a very unattractive way, and with her body and face, and finally, her voice, she tells me, "I don't care. I want to help you."

"But this won't help anyone," I repeat.

"How do you know? Until you try, how can you know?"

I stare at those vivid eyes, and wait.

She manages a shallow sudden breath. "Oh, my."

"You see?" I ask.

For the last time, I have surprised her. Quietly, and with a real pain, she says, "This has happened before."

"Three times," I allow.

Now she looks down at her hands, quietly wondering, "Who were they?" And then, "Women?"

"Sure."

But she isn't defeated. A pathological idealist, she needs to tell me, "This time is going to be different. I'm going to set you free—"

"You aren't going to accomplish shit. You can't, so forget it." An honest gasp rises up inside me, and years of exasperation boil out. "The system is the system. It can't be beaten. So just walk away."

Somewhere in those words, she hears a possibility. With tears on the suddenly puffy cheeks, she asks, "What would be enough?"

I say nothing.

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"To end the system," she says. "What would prove that it's wrong?"

I say, "Nothing will," in a certain way.

Then I grin for a moment—a grin that I have practiced and perfected, knowing and charming and capable of transporting volumes in an instant. And I say to her, "Think," just as our link is permanently and irrevocably severed.

"You're evil," I hear.

I am awake suddenly. My table makes into a soft bed, but I have always slept on the floor, using only my arms for pillows. It must be the middle of the night. Only the faint pink glow of the nightlight illuminates a realm that never seems large. The room is always tiny. "Why am I?" I ask the room. "Evil, you say?"

"She took your advice," it tells me.

I sit up. "Took what?"

"No more games," it warns. Then with horror and sadness, it says, "One of Amy's neighbors filed an official complaint, and by law, she had to be tested."

The Malcom test, it means.

"She answered every question with the worst possible answer. And somehow, she managed to mimic some of the amoral physiological responses."

"So what?" I ask. "She's an adult without a criminal history. What's the worst that can happen? She gets labeled and put under observation for the next two or three years, and then . . . and then . . . wait, there's something else, isn't there. . . ?"

Silence.

"You wouldn't be pissed over some woman's bad diagnose," I admit. Then after a few moments of feeling lost, I have to ask, "What else happened? What did she do?"

"Think," the room urges.

"Cruelty to animals," I realize. "What? Did she do something to her damned lemurs?"

"Something," is all it will tell me. Then with a sorrowful voice, it says, "Amy is being processed now. For the next two years, she will live in protective custody. The laws are clear, and they can't be disobeyed—"

"The laws are wrong," I say.

"And *you're* evil," it growls. "You pushed her. Trained her. Suggested what books to read, seducing her altruistic nature."

I say nothing.

"You are shit," the room tells me.

"Am I?"

"Ruining a young woman's life," it says. "And for *what?*"

With a calm, almost matter-of-fact voice, I admit, "I thought I was making a point. And I succeeded rather well, I think."

"Do you?"

I have to laugh, bitterly and with an ocean of malice. Then I look at my own hands, asking, "Who was my audience, you stupid shit? Who was I appealing to here? A sweet, foolish girl who has absolutely no power, or the sentient and legally emancipated entity that stands guard over me . . . that comprises my walls...*that can open my door. . . ?*" O

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HALO

Charles Stross

Charles Stross lives in Edinburgh, Scotland, along with a couple of cats, twenty or so computers, and a very patient partner. His novel, "The Atrocity Archive," is currently being serialized in *Spectrum SF*—a Scottish SF magazine. *Toast*, a collection of his short stories, is available from Cosmos Books <*www.cosmos-books.com*>, and the author's next novel, *Festival of Fools*, is due out soon in the UK from Big Engine.

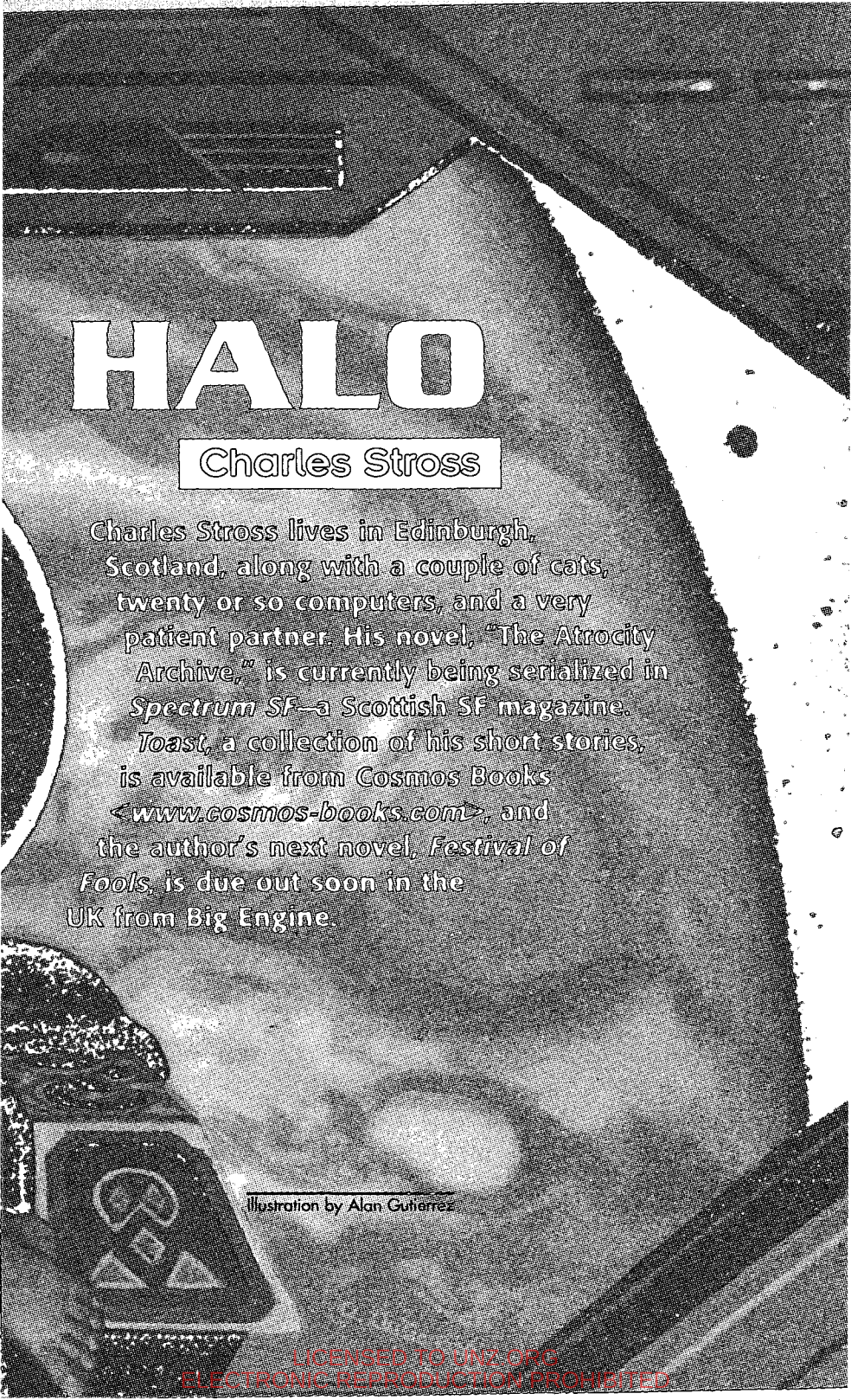

Illustration by Alan Gutierrez

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The asteroid is running Barney: it sings of love on the high frontier, of the passion of matter for replicators, and its friendship for the needy billions of the Pacific Rim. "I love you," it croons in Amber's ears as she seeks a precise fix on it: "let me give you a big hug. . . ."

A fraction of a light-second away, Amber locks a cluster of cursors together on the signal, trains them to track its Doppler shift, and reads off the orbital elements. "Locked and loaded," she mutters. The animated purple dinosaur pirouettes and prances in the middle of her viewport, throwing a diamond-tipped swizzle-stick overhead. Sarcastically: "big hug time! I got asteroid!" Cold gas thrusters bang somewhere behind her in the interstage docking ring, prodding the cumbersome farm ship round to orient on the Barney rock. She damps her enthusiasm self-consciously, her implants hungrily sequestrating surplus neurotransmitter molecules floating around her synapses before reuptake sets in: it doesn't do to get too excited in free flight. But the impulse to spin handstands, jump and sing, is still there: it's *her* rock, and it loves her, and she's going to bring it to life.

The workspace of Amber's room is a mass of stuff that probably doesn't belong on a space ship. Posters of the latest Lebanese boy-band bump-and-grind through their glam routines; tentacular restraining straps wave from the corners of her sleeping bag, somehow accumulating a crust of dirty clothing from the air like a giant inanimate hydra. (Cleaning robots seldom dare to venture inside the teenager's bedroom.) One wall is repeatedly cycling through a simulation of the projected construction cycle of Habitat One, a big fuzzy sphere with a glowing core (that Amber is doing her bit to help create): three or four small pastel-colored plastic *kawai* dolls stalk each other across its circumference with million-kilometer strides. And her father's cat is curled up between the aircon duct and her costume locker, snoring in a high-pitched tone.

Amber yanks open the faded velour curtain that shuts her room off from the rest of the hive: "*I've got it!*" she shouts. "It's all mine! I rule!" It's the sixteenth rock tagged by the orphanage so far, but it's *her* first, and that makes it special. She bounces off the other side of the commons, surprising one of Oscar's cane toads—which should be locked down in the farm, it's not clear how it got here—and the audio repeaters copy the incoming signal, noise-fuzzed echoes of a thousand fossilized infant's video shows.

"You're so *prompt,* Amber," Pierre whines when she corners him in the canteen.

"Well, yeah!" She tosses her head, barely concealing a smirk of delight at her own brilliance. She knows it isn't nice, but Mom is a long way away, and Dad and Step-Mom don't care about that kind of thing. "*I'm* brilliant, *me!*" she announces. "Now what about our bet?"

"Aww." Pierre thrusts his hands deep into his pockets. "But I don't *have* two million on me in change right now. Next cycle?"

"Huh?" She's outraged. "But we had a bet!"

"Uh, Doctor Bayes said you weren't going to make it this time, either, so I stuck my smart money in an options trade. If I take it out now, I'll take a big hit. Can you give me until cycle's end?"

"You should know better than to trust a *sim,* Pee." Her avatar blazes at him with early teen contempt: Pierre hunches his shoulders under her gaze. He's only thirteen, freckled, hasn't yet learned that you don't welsh on a

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deal. "I'll let you do it *this* time," she announces, "but you'll have to pay for it. I want interest."

He sighs. "What base rate are you—"

"No, *your* interest! Slave for a cycle!" She grins malevolently.

And his face shifts abruptly into apprehension: "As long as you don't make me clean the litter tray again. You aren't planning on doing *that,* are you?"

Welcome to the third decade. The thinking mass of the solar system now exceeds one MIP per gram; it's still pretty dumb, but it's not dumb all over. The human population is near maximum overshoot, pushing nine billion, but its growth rate is tipping toward negative numbers, and bits of what used to be the first world are now facing a middle-aged average. Human cogitation provides about 10^{28} MIPS of the solar system's brainpower. The real thinking is mostly done by the halo of a thousand trillion processors that surround the meat machines with a haze of computation—individually, a tenth as powerful as a human brain, collectively, they're ten thousand times more powerful, and their numbers are doubling every twenty million seconds. They're up to 10^{33} MIPS and rising, although there's a long way to go before the solar system is fully awake.

Technologies come, technologies go, but even five years ago nobody predicted that there'd be tinned primates in orbit around Jupiter by now: a synergy of emergent industries and strange business models have kick-started the space age again, aided and abetted by the discovery of (so far undecrypted) signals from ET's. Unexpected fringe-riders are developing new ecological niches on the edge of the human information space, light-minutes and light-hours from the core, as an expansion that has hung fire since the 1970s gets under way.

Amber, like most of the post-industrialists aboard the orphanage ship *Ernst Sanger,* is in her early teens: her natural abilities are enhanced by germ-line genetic recombination. Like most of the others, half her wetware is running outside her skull on an array of processor nodes hooked in by quantum-entangled communication channels—her own personal metacortex. These kids are mutant youth, burning bright: not quite incomprehensible to their parents, but profoundly alien—the generation gap is as wide as the 1960s and as deep as the solar system. Their parents, born in the gutter-years of the twentieth century, grew up with white elephant shuttles and a space station that just went round and round, and computers that went beep when you pushed their buttons: the idea that Jupiter was somewhere you could *go* was as profoundly counter-intuitive as the internet to a baby boomer.

Most of the passengers on the can have run away from parents who thought that teenagers belong in school, unable to come to terms with a generation so heavily augmented that they are fundamentally brighter than the adults around them. Amber was fluent in nine languages by the age of six, only two of them human, and six of them serializable; her birthmother—who had denied her most of the prenatal mods then available, insisting that a random genotype was innately healthier—had taken her to the school psychiatrist for speaking in synthetic tongues. That was the final straw for Amber: using an illicit anonymous phone, she called her father. Her mother had him under a restraining order, but it hadn't occurred to her to apply for an order against his *partner.* . . .

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Vast whorls of cloud ripple beneath the ship's drive stinger: orange and brown and muddy grey streaks slowly ripple across the bloated horizon of Jupiter. *Sanger* is nearing perijove, deep within the gas giant's lethal magnetic field; static discharges flicker along the tube, arcing over near the deep violet exhaust cloud emerging from the magnetic mirrors of the ship's VASIMR motor. The plasma rocket is cranked up to maximum mass flow, its specific impulse almost as low as a fission rocket but thrusting at maximum as the assembly creaks and groans through the gravitational assist maneuver. In another hour, the drive will flicker off, and the orphanage will fall up and out toward Ganymede, before dropping back in toward orbit around Amalthea, Jupiter's fourth moon (and source of much of the material in the Gossamer ring). They're not the first canned primates to make it to Jupiter subsystem, but they're one of the first wholly private ventures. The bandwidth out here sucks dead slugs through a straw, with millions of kilometers of vacuum separating them from scant hundreds of mouse-brained microprobes and a few mechanical dinosaurs left behind by NASA or ESA. They're so far from the inner system that a good chunk of the ship's communications array is given over to caching: the news is whole kiloseconds old by the time it gets out here.

Amber, along with about half the waking passengers, watches in fascination from the common room. The commons are a long axial cylinder, a double-hulled inflatable at the center of the ship with a large part of their liquid water supply stored in its wall-tubes. The far end is video-enabled, showing them a realtime 3D view of the planet as it rolls beneath them: in reality, there's as much mass as possible between them and the trapped particles in the Jovian magnetic envelope. "I could go swimming in that," sighs Lilly. "Just imagine, diving into that sea. . . ." Her avatar appears in the window, riding a silver surfboard down the kilometers of vacuum.

"Nice case of wind-burn you've got there," someone jeers: Kas. Suddenly, Lilly's avatar, heretofore clad in a shimmering metallic swimsuit, turns to the texture of baked meat, and waggles sausage-fingers up at them in warning.

"Same to you and the window you climbed in through!" Abruptly the virtual vacuum outside the window is full of bodies, most of them human, contorting and writhing and morphing in mock-combat as half the kids pitch into the virtual deathmatch: it's a gesture in the face of the sharp fear that outside the thin walls of the orphanage lies an environment that really *is* as hostile as Lilly's toasted avatar would indicate.

Amber turns back to her slate: she's working through a complex mess of forms, necessary before the expedition can start work. Facts and figures that are never far away crowd around her, intimidating. Jupiter weighs 1.9×10^{27} kilograms. There are twenty-nine Jovian moons and an estimated two hundred thousand minor bodies, lumps of rock, and bits of debris crowded around them—debris above the size of ring fragments, for Jupiter (like Saturn) has rings, albeit not as prominent. A total of six major national orbiter platforms have made it out here—and another two hundred and seventeen microprobes, all but six of them private entertainment platforms. The first human expedition was put together by ESA Studios six years ago, followed by a couple of wildcat mining prospectors and a u-commerce bus that scattered half a million picoprobes throughout Jupiter subsystem. Now the *Sanger* has arrived, along with another three monkey cans—one from Mars, two more from LEO—and it looks as if colonization would explode ex-

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cept that there are at least four mutually exclusive Grand Plans for what to do with old Jove's mass.

Someone prods her. "Hey, Amber, what are you up to?"

She opens her eyes. "Doing my homework." It's Su Ang. "Look, we're going to Amalthea, aren't we? But we file our accounts in Reno, so we have to do all this paperwork. Monica asked me to help. It's insane."

Ang leans over and reads, upside down. "Environmental Protection Agency?"

"Yeah. Estimated Environmental Impact Forward Analysis 204.6b, Page Two. They want me to 'list any bodies of standing water within five kilometers of the designated mining area. If excavating below the water table, list any wellsprings, reservoirs, and streams within depth of excavation in meters multiplied by five hundred meters up to a maximum distance of ten kilometers downstream of direction of bedding plane flow. For each body of water, itemize any endangered or listed species of bird, fish, mammal, reptile, invertebrate, or plant living within ten kilometers—'"

"—Of a mine on Amalthea? Which orbits one hundred and eighty thousand kilometers above Jupiter, has no atmosphere, and where you can pick up a whole body radiation dose of ten Grays in half an hour on the surface?" Ang shakes her head, then spoils it by giggling. Amber glances up.

On the wall in front of her someone—Nicky or Boris, probably—has pasted a caricature of her own avatar into the virch fight. She's being hugged from behind by a giant cartoon dog with floppy ears and an erection, who's singing anatomically improbable suggestions while fondling himself suggestively. "Fuck that!" Shocked out of her distraction—and angry—Amber drops her stack of paperwork and throws a new avatar at the screen, one an agent of hers dreamed up overnight: it's called Spike, and it's not friendly. Spike rips off the dog's head and pisses down its trachea, which is anatomically correct for a human being: meanwhile she looks around, trying to work out which of the laughing idiot children and lost geeks around her could have sent such an unpleasant message.

"Children! Chill out." She glances round: one of the Franklins (this is the twenty-something dark-skinned female one) is frowning at them. "Can't we leave you alone for half a K without a fight?"

Amber pouts. "It's not a fight: it's a forceful exchange of opinions."

"Hah." The Franklin leans back in mid-air, arms crossed, an expression of supercilious smugness pasted across her-their face. "Heard that one before. Anyway—" she-they gesture and the screen goes blank "—I've got news for you pesky kids. We got a claim verified! Factory starts work as soon as we shut down the stinger and finish filing all the paperwork via our lawyers. Now's our chance to earn our upkeep! . . ."

Amber is flashing on ancient history, three years back along her timeline. In her replay, she's in some kind of split-level ranch house out west. It's a temporary posting while her mother audits an obsolescent fab line enterprise that grinds out dead chips of VLSI silicon for Pentagon projects that have slipped behind the cutting edge. Her mom leans over her, menacingly adult in her dark suit and chaperonage earrings: "You're going to school, and that's that!"

Her mother is a blonde ice-maiden madonna, one of the IRS's most productive bounty hunters—she can make grown CEOs panic just by blinking at them. Amber, a tow-headed eight-year-old tearaway with a confusing mix

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of identities, inexperience blurring the boundary between self and grid, is not yet able to fight back effectively. After a couple of seconds, she verbalizes a rather feeble protest: "Don't want to!" One of her stance demons whispers that this is the wrong approach to take, so she modifies it: "they'll beat up on me, Mom. I'm too different. 'Sides, I know you want me socialized up with my grade metrics, but isn't that what sideband's for? I can socialize *real* good at home."

Mom does something unexpected: she kneels down, putting herself on eye level with Amber. They're on the living room carpet, all seventies-retro brown corduroy and acid-orange paisley wallpaper: the domestics are in hiding while the humans hold court. "Listen to me, sweetie." Mom's voice is breathy, laden with an emotional undertow as strong and stifling as the eau de cologne she wears to the office to cover up the scent of her client's fear. "I know that's what your father's writing to you, but it isn't true. You need the company—*physical* company—of children your own age. You're *natural,* not some kind of engineered freak, even with your skullset. Natural children like you need company, or they grow up all weird. Don't you know how much you mean to me? I want you to grow up happy, and that won't happen if you don't learn to get along with children your own age. You're not going to be some kind of cyborg otaku freak, Amber. But to *get* healthy, you've got to go to school, build up a mental immune system. That which does not destroy us makes us stronger, right?"

It's crude moral blackmail, transparent as glass and manipulative as hell, but Amber's *corpus logica* flags it with a heavy emotional sprite miming the likelihood of physical discipline if she rises to the bait: Mom is agitated, nostrils slightly flared, ventilation rate up, some vasodilatation visible in her cheeks. Amber—in combination with her skullset and the metacortex of distributed agents it supports—is mature enough at eight years to model, anticipate, and avoid corporal punishment: but her stature and lack of physical maturity conspire to put her at a disadvantage when negotiating with adults who matured in a simpler age. She sighs, then puts on a pout to let Mom know she's still reluctant, but obedient. "O-kay. If you say so."

Mom stands up, eyes distant—probably telling Saturn to warm his engine and open the garage doors. "I say so, punkin. Go get your shoes on, now. I'll pick you up on my way back from work, and I've got a treat for you: we're going to check out a new Church together this evening." Mom smiles, but it doesn't reach her eyes. "You be a good little girl, now, all right?"

The Imam is at prayer in a gyrostabilized mosque.

His mosque is not very big, and it has a congregation of one: he performs salat on his own every seventeen thousand two hundred and eighty seconds. He also webcasts the call to prayer, but there are no other believers in trans-Jovian space to answer the summons. Between prayers, he splits his attention between the exigencies of life-support and scholarship. A student of the Hadith and of knowledge-based systems, Sadeq collaborates in a project with other mujtahid scholars who are building a revised concordance of all the known isnads, to provide a basis for exploring the body of Islamic jurisprudence from a new perspective—one they'll need sorely if the looked-for breakthroughs in communication with aliens emerge. Their goal is to answer the vexatious questions that bedevil Islam in the age of accelerated consciousness: and as their representative in orbit around Jupiter, these questions fall most heavily on Sadeq's shoulders.

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Sadeq is a slightly built man, with close-cropped black hair and a perpetually tired expression: unlike the orphanage crew, he has a ship to himself. The ship started out as an Iranian knock-off of a Shenzhou-B capsule, with a Chinese-type 921 space-station module tacked onto its tail: but the clunky, nineteen-sixties lookalike—a glittering aluminum dragonfly mating with a Coke can—has a weirdly contoured M2P2 pod strapped to its nose. The M2P2 pod is a plasma sail: built in orbit by one of Daewoo's wake shield-facilities, it dragged Sadeq and his cramped space station out to Jupiter in just four months, surfing on the solar breeze. His presence may be a triumph for the Ummah, but he feels acutely alone out here: when he turns his compact observatory's mirrors in the direction of the *Sanger,* he is struck by its size and purposeful appearance. *Sanger*'s superior size speaks of the efficiency of the western financial instruments, semi-autonomous investment trusts with variable business-cycle accounting protocols that make possible the development of commercial space exploration. The Prophet, peace be unto him, may have condemned usury: but surely it would have given him pause to see these engines of capital formation demonstrate their power above the Great Red Spot.

After finishing his prayers, Sadeq spends a couple of extra precious minutes on his mat. He finds that meditation comes hard in this environment: kneel in silence and you become aware of the hum of ventilation fans, the smell of old socks and sweat, the metallic taste of ozone from the Elektron oxygen generators. It is hard to approach God in this third-hand spaceship, a hand-me-down from arrogant Russia to ambitious China, and finally to the religious trustees of Qom, who have better uses for it than any of the heathen states imagine. They've pushed it far, this little toy space station: but who's to say if it is God's intention for humans to live here, in orbit around this swollen alien giant of a planet?

Sadeq shakes his head: he rolls his mat up and stows it beside the solitary porthole with a quiet sigh. A stab of homesickness wrenches at him, for his childhood in hot, dusty Yazd and his many years as a student in Qom: he steadies himself by looking round, searching the station that is by now as familiar to him as the fourth-floor concrete apartment that his parents—a car factory worker and his wife—raised him in. The interior of the station is the size of a school bus, every surface cluttered with storage areas, instrument consoles, and layers of exposed pipes: a couple of globules of antifreeze jiggle like stranded jellyfish near a heat exchanger that has been giving him grief. Sadeq kicks off in search of the squeeze bottle he keeps for this purpose, then gathers up his roll of tools and instructs one of his agents to find him the relevant sura of the maintenance log: it's time to fix this leaky joint for good.

An hour or so of serious plumbing, and then he will eat (freeze-dried lamb stew, with a paste of lentils and boiled rice, and a bulb of strong tea to wash it down), then sit down to review his next flyby maneuvering sequence. Perhaps, God willing, there will be no further system alerts and he'll be able to spend an hour or two on his research between evening and final prayers. Maybe the day after tomorrow, there'll even be time to relax for a couple of hours, to watch one of the old movies that he finds so fascinating for their insights into alien cultures: *Apollo 13,* maybe. It isn't easy, being the only crew aboard a long-duration space mission: and it's even harder for Sadeq, up here with nobody to talk to, for the communications lag to earth is more than half an hour each way—and so far as he knows he's the only believer within half a billion kilometers.

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Amber dials a number in Paris and waits until someone answers the phone. She knows the strange woman on the phone's tiny screen: Mom calls her "your father's fancy bitch," with a peculiar tight smile. (The one time Amber asked what a fancy bitch was, Mom hit her—not hard, just a warning.) "Is Daddy there?" she asks.

The strange woman looks slightly bemused. (Her hair is blonde, like Mom's, but the color clearly came out of a bleach bottle, and it's cut really short, mannish.) "*Oui*. Ah, yes." She smiles tentatively. "I am sorry, it is a disposable phone you are using? You want to talk to 'im?"

It comes out in a rush: "I want to *see* him." Amber clutches the phone like a lifesaver: it's a cheap disposable cereal-packet item, and the cardboard is already softening in her sweaty grip. "Momma won't let me, auntie 'Nette—"

"Hush." Annette, who has lived with Amber's father for more than twice as long as her mother did, smiles. "You are sure that telephone, your mother does not know of it?"

Amber looks around. She's the only child in the rest room because it isn't break time and she told teacher she had to go right *now:* "I'm sure, P_{20} confidence factor greater than 0.9." Her Bayesian head tells her that she can't reason accurately about this because Momma has never caught her with an illicit phone before, but what the hell. *It can't get Dad into trouble if he doesn't know, can it?*

"Very good." Annette glances aside. "Manny, I have a surprise call for you."

Daddy appears on screen. She can see all of his face, and he looks younger than last time: he must have stopped using those clunky old glasses. "Hi—Amber! Where are you? Does your mother know you're calling me?" He looks slightly worried.

"No," she says confidently, "the phone came in a box of Grahams."

"Phew. Listen, sweet, you must remember to never, ever call me where your mom may find out. Otherwise, she'll get her lawyers to come after me with thumb screws and hot pincers, because she'll say *I* made you call me. Understand?"

"Yes, Daddy." She sighs. "Don't you want to know why I called?"

"Um." For a moment he looks taken aback. Then he nods, seriously. Amber likes Daddy because he takes her seriously most times when she talks to him. It's a phreaking nuisance having to borrow her classmates' phones or tunnel past Mom's pit-bull firewall, but Dad doesn't assume that she can't know anything because she's only a kid. "Go ahead. There's something you need to get off your chest? How've things been, anyway?"

She's going to have to be brief: the disposaphone comes pre-paid, the international tariff it's using is lousy, and the break bell is going to ring any minute. "I want *out,* Daddy. I mean it. Mom's getting loopier every week: she's dragging me around to all these churches now, and yesterday she threw a fit over me talking to my terminal. She wants me to see the school shrink, I mean, what *for?* I *can't* do what she wants; I'm not her little girl! Every time I tunnel out, she tries to put a content-bot on me, and it's making my head hurt—I can't even think straight any more!" To her surprise, Amber feels tears starting. "Get me out of here!"

The view of her father shakes, pans around to show her tante Annette looking worried. "You know, your father, he cannot do anything? The divorce lawyers, they will tie him up."

Amber sniffs. "Can *you* help?" she asks.

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"I'll see what I can do," her father's fancy bitch promises as the break bell rings.

An instrument package peels away from the *Sanger*'s claimjumper drone and drops toward the potato-shaped rock, fifty kilometers below. Jupiter hangs huge and gibbous in the background, impressionist wallpaper for a mad cosmologist: Pierre bites his lower lip as he concentrates on steering it.

Amber, wearing a black sleeping-sack, hovers over his head like a giant bat, enjoying her freedom for a shift. She looks down on Pierre's bowl-cut hair, his wiry arms gripping either side of the viewing table, and wonders what to have him do next. A slave for a day is an interesting experience, restful: life aboard the *Sanger* is busy enough that nobody gets much slack-time (at least, not until the big habitats have been assembled and the high bandwidth dish is pointing at Earth). They're unrolling everything to a hugely intricate plan generated by the backers' critical path team, and there isn't much room for idling: the expedition relies on shamelessly exploitative child labor—they're lighter on the life-support consumables than adults—working the kids twelve-hour days to assemble a toe-hold on the shore of the future. (When they're older and their options vest fully, they'll all be rich—but that hasn't stopped the outraged herdnews propaganda back home.) For Amber, the chance to let somebody else work for her is novel, and she's trying to make every minute count.

"Hey, slave," she calls idly: "how you doing?"

Pierre sniffs. "It's going okay." He refuses to glance up at her, Amber notices. He's thirteen: isn't he supposed to be obsessed with girls by that age? She notices his quiet, intense focus, runs a stealthy probe along his outer boundary: he shows no sign of noticing it but it bounces off, unable to chink his mental armor. "Got cruise speed," he says, taciturn, as two tons of metal, ceramics, and diamond-phase weirdness hurtles toward the surface of Barney at three hundred kilometers per hour. "Stop shoving me: there's a three-second lag and I don't want to get into a feedback control-loop with it."

"I'll shove if I want, *slave*." She sticks her tongue out at him.

"And if you make me drop it?" he asks. Looking up at her, his face serious— "Are we supposed to be doing this?"

"You cover your ass and I'll cover *mine,*" she says, then turns bright red. "You know what I mean."

"I do, do I?" Pierre grins widely, then turns back to the console: "Aww, that's no fun. And you want to tune whatever bit-bucket you've given control of your speech centers to: they're putting out way too much *double-entendre,* somebody might mistake you for a grown-up."

"You stick to *your* business and *I'll* stick to *mine,*" she says, emphatically. "And you can start by telling me what's happening."

"Nothing." He leans back and crosses his arms, grimacing at the screen. "It's going to drift for five hundred seconds, now, then there's the midcourse correction and a deceleration burn before touch-down. And *then* it's going to be an hour while it unwraps itself and starts unwinding the cable spool. What do you want, minute noodles with that?"

"Uh-huh." Amber spreads her bat-wings and lies back in mid-air, staring at the window, feeling rich and idle as Pierre works his way through her day-shift. "Wake me when there's something interesting to see." Maybe she should have had him feed her peeled grapes or give her a foot massage, something more traditionally hedonistic: but right now just *knowing* he's

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her own little piece of alienated labor is doing good things for her self-esteem. Looking at those tense arms, the curve of his neck, she thinks maybe there's something to this whispering-and-giggling he *really likes you* stuff the older girls go in for—

The window rings like a gong and Pierre coughs. "You've got mail," he says dryly. "You want me to read it for you?"

"What the—" A message is flooding across the screen, right-to-left snaky script like the stuff on her corporate instrument (now lodged safely in a deposit box in Zurich). It takes her a while to page-in the grammar agent that can handle Arabic, and another minute for her to take in the meaning of the message. When she does, she starts swearing, loudly and continuously.

"*You* bitch, *Mom! Why'd you have to go and do a thing like* that?"

The corporate instrument arrived in a huge FedEx box addressed to Amber: it happened on her birthday while Mom was at work, and she remembers it as if it was only an hour ago.

She remembers reaching up and scraping her thumb over the delivery man's clipboard, the rough feel of the microsequencers sampling her DNA; afterward, she drags the package inside. When she pulls the tab on the box it unpacks itself automatically, regurgitating a compact 3D printer, half a ream of paper printed in old-fashioned dumb ink, and a small calico cat with a large @-symbol on its flank. The cat hops out of the box, stretches, shakes its head, and glares at her. "You're Amber?" it mrowls.

"Yeah," she says, shyly. "Are you from Tanté 'Nette?"

"No, I'm from the fucking tooth fairy." It leans over and head-butts her knee, strops the scent glands between its ears all over her skirt. "Listen, you got any tuna in the kitchen?"

"Mom doesn't believe in seafood," says Amber: "it's all foreign junk, she says. It's my birthday today, did I tell you?"

"Happy fucking birthday, then." The cat yawns, convincingly realistic. "Here's your dad's present. Bastard put me in hibernation and blogged me along to show you how to work it. You take my advice, you'll trash the fucker. No good will come of it."

Amber interrupts the cat's grumbling by clapping her hands gleefully. "So what *is* it?" she demands. "A new invention? Some kind of weird sex toy from Amsterdam? A gun, so I can shoot Pastor Wallace?"

"Naaah." The cat yawns, yet again, and curls up on the floor next to the 3D printer. "It's some kinda dodgy business model to get you out of hock to your mom. Better be careful, though—he says its legality is narrowly scoped jurisdiction-wise."

"Wow. Like, how totally cool!" In truth, Amber is delighted because it *is* her birthday, but Mom's at work and Amber's home alone, with just the TV in moral-majority mode for company. Things have gone so far downhill since Mom discovered religion that absolutely the best thing in the world tante Annette could have sent her is some scam programmed by Daddy to take her away. If he doesn't, Mom will take her to Church tonight (and maybe to an IRS compliance-certified restaurant afterward, if Amber's good and does whatever Pastor Wallace tells her to).

The cat sniffs in the direction of the printer: "Why dontcha fire it up?" Amber opens the lid on the printer, removes the packing popcorn, and plugs it in. There's a whirr and a rush of waste heat from its rear as it cools the imaging heads down to working temperature and registers her ownership.

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"What do I do now?" she asks.

"Pick up the page labeled READ ME and follow the instructions," the cat recites in a bored sing-song voice. It winks at her, then fakes an exaggerated French accent: "Le READ ME contains directions pour l'execution instrument corporate dans le boîte. In event of perplexity, consult the accompanying aineko for clarification." The cat wrinkles its nose rapidly, as if it's about to bite an invisible insect. "Warning: don't rely on your father's cat's opinions, it is a perverse beast and cannot be trusted. Your mother helped seed its meme base, back when they were married. *Ends.*" It mumbles on for a while: "fucking snotty Parisian bitch, I'll piss in her knicker drawer, I'll molt in her bidet. . . ."

"Don't be vile." Amber scans the README quickly. Corporate instruments are strong magic, according to Daddy, and this one is exotic by any standards: a limited company established in Yemen, contorted by the intersection between shari'a and the global legislatosaurus. Understanding it isn't easy, even with a personal net full of sub-sapient agents that have full access to whole libraries of international trade law—the bottleneck is comprehension. Amber finds the documents highly puzzling. It's not the fact that half of them are written in Arabic that bothers her—that's what her grammar engine is for—or even that they're full of S-expressions and semi-digestible chunks of LISP: but that the company seems to assert that it exists for the sole purpose of owning slaves.

"What's going on?" she asks the cat. "What's this all about?"

The cat sneezes, then looks disgusted. "This wasn't *my* idea, big shot. Your father is a very weird guy and your mother hates him lots because she's still in love with him. She's got kinks, y'know? Or maybe she's sublimating them, if she's serious about this church shit she's putting you through. He thinks that she's a control freak. Anyway, after your dad ran off in search of another dome, she took out an injunction against him. But she forgot to cover his partner, and *she* bought this parcel of worms and sent them to you, okay? Annie is a real bitch, but he's got her wrapped right around his finger, or something. Anyway, he built these companies and this printer—which isn't hardwired to a filtering proxy, like your mom's—specifically to let you get away from her legally. *If* that's what you want to do."

Amber fast-forwards through the dynamic chunks of the README—boring static UML diagrams, mostly—soaking up the gist of the plan. Yemen is one of the few countries to implement traditional Sunni shari'a law and a limited-liability company scam at the same time. Owning slaves is legal—the fiction is that the owner has an option hedged on the indentured laborer's future output, with interest payments that grow faster than the unfortunate victim can pay them off—and companies are legal entities. If Amber sells herself into slavery to this company, she will become a slave, and the company will be legally liable for her actions and upkeep. The rest of the legal instrument—about 90 percent of it, in fact—is a set of self-modifying corporate mechanisms coded in a variety of jurisdictions that permit Turing-complete company constitutions, and which act as an ownership shell for the slavery contract: at the far end of the corporate firewall is a trust fund of which Amber is the prime beneficiary and shareholder. When she reaches the age of majority, she'll acquire total control over all the companies in the network and can dissolve her slave contract; until then, the trust funds (which she essentially owns) oversee the company that owns her (and keeps it safe from hostile takeover bids). Oh, and the company network is

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primed by an extraordinary general meeting that instructed it to move the trust's assets to Paris immediately. A one-way airline ticket is enclosed.

"You think I should take this?" she asks uncertainly. It's hard to tell how smart the cat really is—there's probably a yawning vacuum behind those semantic networks if you dig deep enough—but it tells a pretty convincing tale.

The cat squats and curls its tail protectively around its paws: "I'm saying nothing, you know what I mean? You take this, you can go live with your dad. But it won't stop your ma coming after him with a horse whip and after *you* with a bunch of lawyers and a set of handcuffs. You want *my* advice, you'll phone the Franklins and get aboard their off-planet mining scam. In space, no one can serve a writ on you. Plus, they got long-term plans to get into the CETI market, cracking alien network packets. You want my honest opinion, you wouldn't like it in Paris after a bit. Your dad and the frog bitch, they're swingers, y'know? No time in their lives for a kid. Or a cat like me, now I think of it. They're out all hours of the night doing drugs, fetish parties, raves, opera, that kind of adult shit. Your dad dresses in frocks more than your mom, and your tante 'Nettie leads him around the apartment on a chain when they're not having noisy sex on the balcony. They'd cramp your style, kid: you shouldn't have to put up with parents who have more of a life than you do."

"Huh." Amber wrinkles her nose, half-disgusted by the cat's transparent scheming, and half-acknowledging its message: *I'd better think hard about this,* she decides. Then she flies off in so many directions at once that she nearly browns out the household net feed. Part of her is examining the intricate card pyramid of company structures; somewhere else, she's thinking about what can go wrong, while another bit (probably some of her wet, messy glandular biological self) is thinking about how nice it would be to see Daddy again, albeit with some trepidation. Parents aren't supposed to have sex: isn't there a law, or something? "Tell me about the Franklins? Are they married? Singular?"

The 3D printer is cranking up. It hisses slightly, dissipating heat from the hard-vacuum chamber in its supercooled workspace. Deep in its guts it creates coherent atom beams, from a bunch of Bose-Einstein condensates hovering on the edge of absolute zero: by superimposing interference patterns on them, it generates an atomic hologram, building a perfect replica of some original artifact, right down to the atomic level—there are no clunky moving nanotechnology parts to break or overheat or mutate. Something is going to come out of the printer in half an hour, something cloned off its original right down to the individual quantum states of its component atomic nuclei. The cat, seemingly oblivious, shuffles closer to its exhaust ducts.

"Bob Franklin, he died about two, three years before you were born: your dad did business with him. So did your mom. Anyway, he had chunks of his noumen preserved, and the estate trustees are trying to recreate his consciousness by cross-loading him in their implants. They're sort of a borganism, but with money and style. Anyway, Bob got into the space biz back then, with some financial wizardry a friend of your father whipped up for him, and now they-he are building a spacehab that they're going to take all the way out to Jupiter, where they can dismantle a couple of small moons and begin building helium-three refineries. It's that CETI scam I told you about earlier, but they've got a whole load of other angles on it for the long term."

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This is mostly going right over Amber's head—she'll have to learn what helium-three refineries are later—but the idea of running away to space has a certain appeal. Adventure, that's what. Amber looks around the living room and sees it for a moment as a capsule, a small wooden cell locked deep in a vision of a middle-America that never was—the one her mom wants to retreat into. "Is Jupiter fun?" she asks. "I know it's big and not very dense, but is it, like, a happening place?"

"You could say that," says the cat, as the printer clanks and disgorges a fake passport (convincingly aged), an intricate metal seal engraved with Arabic script, and a tailored wide-spectrum vaccine targeted on Amber's immature immune system. "Stick that on your wrist, sign the three top copies, put them in the envelope, and let's get going: we've got a flight to catch."

Sadeq is eating his dinner when the lawsuit rolls in.

Alone in the cramped humming void of his station, he contemplates the plea. The language is awkward, showing all the hallmarks of a crude machine translation: the supplicant is American, a woman, and—oddly—claims to be a Christian. This is surprising enough, but the nature of her claim is, at face value, preposterous. He forces himself to finish his bread, then bag the waste and clean the platter, before he gives it his full consideration. Is it a tasteless joke? Evidently not: as the only quadi outside the orbit of Mars he is uniquely qualified to hear it, and it *is* a case that cries out for justice.

A woman who leads a God-fearing life—not a correct one, no, but she shows some signs of humility and progress toward a deeper understanding—is deprived of her child by the machinations of a feckless husband who deserted her years before. That the woman was raising the child alone strikes Sadeq as disturbingly western, but pardonable when he reads her account of the feckless one's behavior, which is degenerate: an ill fate indeed would await any child that this man raises to adulthood. This man deprives her of her child, but not by legitimate means: he doesn't take the child into his own household or make any attempt to raise her, either in accordance with his own customs or the precepts of shari'a. Instead, he enslaves her wickedly in the mire of the western legal tradition, then casts her into outer darkness to be used as a laborer by the dubious forces of self-proclaimed "progress." The same forces that Sadeq has been sent to confront, as representative of the Ummah in orbit around Jupiter.

Sadeq scratches his short beard thoughtfully. A nasty tale, but what can he do about it? "Computer," he says, "a reply to this supplicant: my sympathies lie with you in the manner of your suffering, but I fail to see in what way I can be of assistance. Your heart cries out for help before God (blessed be his name), but surely this is a matter for the temporal authorities of the dar al-Harb." He pauses: *or is it?* he wonders. Legal wheels begin to turn in his mind. "If you can but find your way to extending to me a path by which I can assert the primacy of shari'ah over your daughter, I shall apply myself to constructing a case for her emancipation, to the greater glory of God (blessed be his name) in the name of the Prophet (peace be unto him). Ends, sigblock, send."

Releasing the Velcro straps that hold him at the table, Sadeq floats up and then kicks gently toward the forward end of the cramped habitat. The controls of the telescope are positioned between the ultrasonic clothing cleaner and the lithium hydroxide scrubbers: they're already freed up, be-

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cause he was conducting a wide-field survey of the inner ring, looking for the signature of water ice. It is the work of a few moments to pipe the navigation and tracking system into the telescope's controller and direct it to hunt for the big foreign ship of fools. Something nudges at Sadeq's mind urgently, an irritating realization that he may have missed something in the woman's email: there were a number of huge attachments. With half his mind, he surfs the news digest his scholarly peers send him daily: meanwhile, he waits patiently for the telescope to find the speck of light that the poor woman's daughter is enslaved within.

This might be a way in, he realizes, a way to enter dialogue with them. Let the hard questions answer themselves, elegantly. There will be no need for the war of the sword if they can be convinced that their plans are faulty: no need to defend the godly from the latter-day Tower of Babel these people propose to build. If this woman Pamela means what she says, Sadeq need not end his days out here in the cold between the worlds, away from his elderly parents and brother and his colleagues and friends. And he will be profoundly grateful: because, in his heart of hearts, he knows that he is less a warrior than a scholar.

"I'm sorry, but the Borg is attempting to assimilate a lawsuit," says the receptionist. "Will you hold?"

"Crud." Amber blinks the Binary Betty answerphone sprite out of her eye and glances around at the cabin. "That is *so* last century," she grumbles. "Who do they think they are?"

"Doctor Robert H. Franklin," volunteers the cat. "It's a losing proposition if you ask me. Bob was so fond of his dope that there's this whole hippie groupmind that's grown up using his state vector as a bong—"

"Shut the fuck up!" Amber shouts at him. Instantly contrite (for yelling in an inflatable spacecraft is a major faux pas): "Sorry." She spawns an autonomic thread with full parasympathetic nervous control, tells it to calm her down: then she spawns a couple more to go forth and become fuqaha, expert on shari'a law. She realizes she's buying up way too much of the orphanage's scarce bandwidth—time that will have to be paid for in chores, later—but it's necessary. "She's gone *too* far. This time, it's *war*."

She slams out of her cabin and spins right around in the central axis of the hab, a rogue missile pinging for a target to vent her rage on. A tantrum would be *good*—

But her body is telling her to chill out, take ten, and there's a drone of scriptural lore dribbling away in the back of her head, and she's feeling frustrated and angry and not in control, but not really mad now. It was like this three years ago when Mom noticed her getting on too well with Jenny Morgan and moved her to a new school district—she said it was a work assignment, but Amber knows better, Mom asked for it—just to keep her dependent and helpless. Mom is a psycho bitch control-freak and ever since she had to face up to losing Dad she's been working her claws into Amber—which is tough, because Amber is not good victim material, and is smart and well-networked to boot. But now Mom's found a way of fucking Amber over *completely,* even in Jupiter orbit, and Amber would be totally out of control if not for her skullware keeping a lid on things.

Instead of shouting at her cat or trying to message the Borg, Amber goes to hunt them down in their meatspace den.

There are sixteen Borg aboard the *Sanger*—adults, members of the

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Franklin Collective, squatters in the ruins of Bob Franklin's posthumous vision. They lend bits of their brains to the task of running what science has been able to resurrect of the dead dot-com billionaire's mind, making him the first boddhisatva of the uploading age—apart from the lobster colony, of course. Their den mother is a woman called Monica: a willowy brown-eyed hive queen with raster-burned corneal implants and a dry, sardonic delivery that can corrode egos like a desert wind. She's better than the others at running Bob, and she's no slouch when she's being herself: which is why they elected her Maximum Leader of the expedition.

Amber finds Monica in the number four kitchen garden, performing surgery on a filter that's been blocked by toadspawn. She's almost buried beneath a large pipe, her Velcro-taped toolkit waving in the breeze like strange blue air-kelp. "Monica? You got a minute?"

"Sure, I have lots of minutes. Make yourself helpful? Pass me the anti-torque wrench and a number-six hex head."

"Um." Amber captures the blue flag and fiddles around with its contents. Something that has batteries, motors, a flywheel counterweight, and laser gyros assembles itself—Amber passes it under the pipe. "Here. Listen, your phone is busy."

"I know. You've come to see me about your conversion, haven't you?"

"Yes!"

There's a clanking noise from under the pressure sump. "Take this." A plastic bag floats out, bulging with stray fasteners. "I got a bit of vacuuming to do. Get yourself a mask if you don't already have one."

A minute later, Amber is back beside Monica's legs, her face veiled by a filter mask. "I don't want this to go through," she says. "I don't care what Mom says, I'm not Moslem! This judge, he can't touch me. He *can't,*" she repeats, vehemence warring with uncertainty.

"Maybe he doesn't want to?" Another bag. "Here, catch."

Amber grabs the bag: too late, she discovers that it's full of water and toadspawn. Stringy mucous ropes full of squiggling comma-shaped baby tadpoles explode all over the compartment and bounce off the walls in a shower of amphibian confetti. "Eew!"

Monica squirms out from behind the pipe. "Oh, you *didn't.*" She kicks off the consensus-defined floor and grabs a wad of absorbent paper from the spinner, whacks it across the ventilator shroud above the sump. Together they go after the toadspawn with garbage bags and paper—by the time they've got the stringy mess mopped up, the spinner has begun to click and whirr, processing cellulose from the algae tanks into fresh wipes. "That was really clever," Monica says emphatically, as the disposal bin sucks down her final bag. "You wouldn't happen to know how the toad got in here?"

"No, but I ran into one that was loose in the commons, one shift before last cycle-end. Gave it a ride back to Oscar."

"I'll have a word with him, then." Monica glares blackly at the pipe. "I'm going to have to go back and re-fit the filter in a minute. Do you want me to be Bob?"

"Uh." Amber thinks. "Not sure. Your call."

"All right, Bob coming online." Monica's face relaxes slightly, then her expression hardens. "Way I see it, you've got a choice. Your mother's kinda boxed you in, hasn't she?"

"Yes." Amber frowns.

"So. Pretend I'm an idiot. Talk me through it, huh?"

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Amber drags herself alongside the hydro pipe and gets her head down, alongside Monica/Bob, who is floating with her feet near the floor. "I ran away from home. Mom owned me—that is, she had parental rights and Dad had none. So Dad, via a proxy, helped me sell myself into slavery to a company. The company was owned by a trust fund, and I'm the main beneficiary when I reach the age of majority. As a chattel, the company tells me what to do—legally—but the shell company is set to take my orders. So I'm autonomous. Right?"

"That sounds like the sort of thing your father would do," Monica says neutrally. Overtaken by a sardonic middle-aged Silicon Valley drawl, her north-of-England accent sounds peculiarly mid-Atlantic.

"Trouble is, most countries don't acknowledge slavery; those that do mostly don't have any equivalent of a limited-liability company, much less one that can be directed by another company from abroad. Dad picked Yemen on the grounds that they've got this stupid brand of shari'a law—and a crap human-rights record—but they're just about conformant to the open legal standards protocol, able to interface to EU norms via a Turkish legislative firewall."

"So."

"Well, I guess I was technically a Jannissary. Mom was doing her Christian phase, so that made me a Christian un-believer slave of an Islamic company. But now the stupid bitch has gone and converted to shi'ism. Now, normally, Islamic descent runs through the father, but she picked her sect carefully, and chose one that's got a progressive view of women's rights: they're sort of Islamic fundamentalist liberal constructionists! 'What would the Prophet do if he were alive today and had to worry about self-replicating chewing gum factories.' They generally take a progressive, almost westernized, view of things like legal equality of the sexes, because for his time and place, the Prophet was way ahead of the ball and they figure they ought to follow his example. Anyway, that means Mom can assert that *I* am Moslem, and under Yemeni law I get to be treated as a Moslem chattel of a company. And their legal code is very dubious about permitting slavery of Moslems. It's not that I have *rights* as such, but my pastoral well-being becomes the responsibility of the local imam, and—" She shrugs helplessly.

"Has he tried to make you run under any new rules, yet?" asks Monica/Bob. "Has he put blocks on your freedom of agency, tried to mess with your mind? Insisted on libido dampers?"

"Not yet." Amber's expression is grim. "But he's no dummy. I figure he may be using Mom—and me—as a way of getting his fingers into this whole expedition. Staking a claim for jurisdiction, claim arbitration, that sort of thing. It could be worse; he might order me to comply fully with his specific implementation of shari'a. They permit implants, but require mandatory conceptual filtering: if I run that stuff, I'll end up *believing* it!"

"Okay." Monica does a slow backward somersault in mid-air. "Now tell me why you can't simply repudiate it."

"Because." Deep breath. "I can do that in two ways. I can deny Islam, which makes me an apostate, and automatically terminates my indenture to the shell, so Mom owns me. Or I can say that the instrument has no legal standing because I was in the USA when I signed it, and slavery is illegal there, in which case Mom owns me, because I'm a minor. Or I can take the veil, live like a modest Moslem woman, do whatever the imam wants, and Mom doesn't own me—but she gets to appoint my chaperone. Oh Bob, she has planned this *so well*."

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"Uh-huh." Monica rotates back to the floor and looks at Amber, suddenly very Bob. "Now you've told me your troubles, start thinking like your dad. Your dad had a dozen creative ideas before breakfast every day—it's how he made his name. Your mom has got you in a box. Think your way *outside* it: what can you do?"

"Well." Amber rolls over and hugs the fat hydroponic duct to her chest like a life raft. "It's a legal paradox. I'm trapped because of the jurisdiction she's cornered me in. I could talk to the judge, I suppose, but she'll have picked him carefully." Her eyes narrow. "The jurisdiction. Hey, Bob." She lets go of the duct and floats free, hair streaming out behind her like a cometary halo. "How do I go about creating myself a new jurisdiction?"

Monica grins. "I seem to recall the traditional way was to grab yourself some land and set yourself up as king: but there are other ways. I've got some friends I think you should meet. They're not good conversationalists and there's a two-hour lightspeed delay . . . but I think you'll find they've answered that question already. But why don't you talk to the imam first and find out what he's like? He may surprise you. After all, he was already out here before your mom decided to use him against you."

The *Sanger* hangs in orbit thirty kilometers up, circling the waist of potato-shaped Amalthea. Drones swarm across the slopes of Mons Lyctos, ten kilometers above the mean surface level: they kick up clouds of reddish sulfate dust as they spread transparent sheets across the surface. This close to Jupiter—a mere hundred and eighty thousand kilometers above the swirling madness of the cloudscape—the gas giant fills half the sky with a perpetually changing clockface: for Amalthea orbits the master in under twelve hours. The *Sanger*'s radiation shields are running at full power, shrouding the ship in a corona of rippling plasma: radio is useless, and the human miners run their drones via an intricate network of laser circuits. Other, larger drones are unwinding spools of heavy electrical cable north and south from the landing site: once the circuits are connected, these will form a coil cutting through Jupiter's magnetic field, generating electrical current (and imperceptibly slowing the moon's orbital momentum).

Amber sighs and looks, for the sixth time this hour, at the webcam plastered on the side of her cabin. She's taken down the posters and told the toys to tidy themselves away. In another two thousand seconds, the tiny Iranian spaceship will rise above the limb of Moshtari, and then it will be time to talk to the teacher. She isn't looking forward to the experience. If he's a grizzled old blockhead of the most obdurate fundamentalist streak, she'll be in trouble: disrespect for age has been part and parcel of the western teenage experience for generations, and a cross-cultural thread that she's sent to clue-up on Islam reminds her that not all cultures share this outlook. But if he turns out to be young, intelligent, and flexible, things could be even worse. When she was eight, Amber audited *The Taming of the Shrew:* now she has no appetite for a starring role in her own cross-cultural production.

She sighs again. "Pierre?"

"Yeah?" His voice comes from the foot of the emergency locker in her room. He's curled up down there, limbs twitching languidly as he drives a mining drone around the surface of Object Barney, as the rock has named itself. The drone is a long-legged crane-fly lookalike, bouncing very slowly from toe-tip to toe-tip in the microgravity—the rock is only half a kilometer

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along its longest axis, coated brown with weird hydrocarbon goop and sulfur compounds sprayed off the surface of Io by the Jovian winds. "I'm coming."

"You better." She glances at the screen. "One twenty seconds to next burn." The payload canister on the screen is, technically speaking, stolen: it'll be okay as long as she gives it back, Bob said, although she won't be able to do that until it's reached Barney and they've found enough water ice to refuel it. "Found anything yet?"

"Just the usual. Got a seam of ice near the semimajor pole—it's dirty, but there's at least a thousand tons there. And the surface is crunchy with tar. Amber, you know what? The orange shit, it's solid with fullerenes."

Amber grins at her reflection in the screen. That's good news. Once the payload she's steering touches down, Pierre can help her lay superconducting wires along Barney's long axis. It's only a kilometer and a half, and that'll only give them a few tens of kilowatts of juice, but the condensation fabricator that's also in the payload will be able to use it to convert Barney's crust into processed goods at about two grams per second. Using designs copylefted by the free hardware foundation, inside two hundred thousand seconds they'll have a grid of sixty-four 3D printers barfing up structured matter at a rate limited only by available power. Starting with a honking great dome tent and some free nitrogen/oxygen for her to breathe, then adding a big webcache and direct high-bandwidth uplink to Earth, Amber could have her very own one-girl colony up and running within a million seconds.

The screen blinks at her. "Oh shit. Make yourself scarce, Pierre!" The incoming call nags at her attention. "Yeah? Who are you?"

The screen fills with a view of a cramped, very twen-cen-looking space capsule. The guy inside it is in his twenties, with a heavily tanned face, close-cropped hair and beard, wearing an olive-drab spacesuit liner. He's floating between a TORU manual-docking controller and a gilt-framed photograph of the Ka'bah at Mecca. "Good evening to you," he says solemnly. "Do I have the honor to be addressing Amber Macx?"

"Uh, yeah. That's me." She stares at him: he looks nothing like her conception of an ayatollah—whatever an ayatollah is—elderly, black-robed, vindictively fundamentalist. "Who are you?"

"I am Doctor Sadeq Khurasani. I hope that I am not interrupting you? Is it convenient for you that we talk now?"

He looks so anxious that Amber nods automatically. "Sure. Did my mom put you up to this?" They're still speaking English, and she notices that his diction is good, but slightly stilted: he isn't using a grammar engine, he's actually learned it the hard way. "If so, you want to be careful. She doesn't lie, exactly, but she gets people to do what she wants."

"Yes, she did. Ah." A pause. They're still almost a light-second apart, time for painful collisions and accidental silences. "I have not noticed that. Are you sure you should be speaking of your mother that way?"

Amber breathes deeply. "*Adults* can get divorced. If *I* could get divorced from her, I would. She's—" she flails around for the right word helplessly. "Look. She's the sort of person who can't lose a fight. If she's going to lose, she'll try to figure how to set the law on you. Like she's done to me. Don't you see?"

Doctor Khurasani looks extremely dubious. "I am not sure I understand," he says. "Perhaps, mm, I should tell you why I am talking to you?"

"Sure. Go ahead." Amber is startled by his attitude: he's actually taking

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her seriously, she realizes. Treating her like an adult. The sensation is so novel—coming from someone more than twenty years old and not a member of the Borg—that she almost lets herself forget that he's only talking to her because Mom set her up.

"Well. I am an engineer. In addition, I am a student of *fiqh,* jurisprudence. In fact, I am qualified to sit in judgment. I am a very junior judge, but even so, it is a heavy responsibility. Anyway. Your mother, peace be unto her, lodged a petition with me. Are you aware of it?"

"Yes." Amber tenses up. "It's a lie. Distortion of the facts."

"Hmm." Sadeq rubs his beard thoughtfully. "Well, I have to find out, yes? Your mother has submitted herself to the will of God. This makes you the child of a Moslem, and she claims—"

"She's trying to use you as a weapon!" Amber interrupts. "I sold myself into *slavery* to get away from her, do you understand? I enslaved myself to a company that is held in trust for my ownership. She's trying to change the rules to get me back. You know what? I don't believe she gives a shit about your religion, all she wants is me!"

"A mother's love—"

"Fuck love!" Amber snarls, "she wants *power.*"

Sadeq's expression hardens. "You have a foul mouth in your head, child. All I am trying to do is to find out the facts of this situation: you should ask yourself if such disrespect furthers your interests?" He pauses for a moment, then continues, less abruptly, "Did you really have such a bad childhood with her? Do you think she did everything merely for power, or could she love you?" Pause. "You must understand, I need an answer to these things. Before I can know what is the right thing to do."

"My mother—" Amber stops. Spawns a vaporous cloud of memory retrievals. They fan out through the space around her mind like the tail of her cometary mind. Invoking a complex of network parsers and class filters, she turns the memories into reified images and blats them at the webcam's tiny brain so that he can see them. Some of the memories are so painful that Amber has to close her eyes. Mom in full office war-paint, leaning over Amber, promising to take her to church so that Reverend Beeching can pray the devil out of her. Mom telling Amber that they're moving again, abruptly, dragging her away from school and the friends she'd tentatively started to like. Mom catching her on the phone to Daddy, tearing the phone in half and hitting her with it. Mom at the kitchen table, forcing her to eat— "My mother likes *control.*"

"Ah." Sadeq's expression turns glassy. "And this is how you feel about her? How long have you had that level of—no, please forgive me for asking. You obviously understand implants. Do your grandparents know? Did you talk to them?"

"My grandparents?" Amber stifles a snort. "Mom's parents are dead. Dad's are still alive, but they won't talk to him—they like Mom. They think I'm creepy. I know little things, their tax bands and customer profiles. I could mine data with my head when I was four. I'm not built like little girls were in their day, and they don't understand. You know that the old ones don't like us at all? Some of the churches make money doing nothing but exorcisms for oldsters who think their kids are possessed."

"Well." Sadeq is fingering his beard again, distractedly. "I must say, this is a lot to learn. But you know that your mother has accepted Islam, don't you? This means that you are Moslem, too. Unless you are an adult, your

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parent legally speaks for you. And she says that this makes you my problem. Hmm."

"I'm not Moslem." Amber stares at the screen. "I'm not a child, either." Her threads are coming together, whispering scarily behind her eyes: her head is suddenly dense and turgid with ideas, heavy as a stone and twice as old as time. "I am nobody's chattel. What does your law say about people who are born with implants? What does it say about people who want to live forever? I don't believe in any *god,* mister judge. I don't believe in any limits. Mom can't, physically, make me do *anything,* and she sure can't speak for me."

"Well, if that is what you have to say, I must think on the matter." He catches her eye: his expression is thoughtful, like a doctor considering a diagnosis. "I will call you again in due course. In the meantime, if you need to talk to anyone, remember that I am always available. If there is anything I can do to help ease your pain, I would be pleased to be of service. Peace be unto you, and those you care for."

"Same to you too," she mutters darkly as the connection goes dead. "*Now* what?" she asks, as a beeping sprite gyrates across the wall, begging for attention.

"I think it's the lander," Pierre says helpfully. "Is it down yet?"

She rounds on him. "Hey, I thought I told you to get lost!"

"What, and miss all the fun?" He grins at her impishly. "Amber's got a new boyfriend! Wait until I tell everybody. . . ."

Sleep cycles pass: the borrowed 3D printer on Object Barney's surface spews bitmaps of atoms in quantum lockstep at its rendering platform, building up the control circuitry and skeletons of new printers. (There are no clunky nano-assemblers here, no robots the size of viruses busily sorting molecules into piles—just the bizarre quantized magic of atomic holography, modulated Bose-Einstein condensates collapsing into strange, lacy, supercold machinery.) Electricity surges through the cable loops as they slice through Jupiter's magnetosphere, slowly converting the rock's momentum into power: small robots grovel in the orange dirt, scooping up raw material to feed to the fractionating oven. Amber's garden of machinery flourishes slowly, unpacking itself according to a schema designed by pre-teens at an industrial school in Poland, with barely any need for human guidance.

High in orbit around Amalthea, complex financial instruments breed and conjugate. Developed for the express purpose of facilitating trade with the alien intelligences believed to have been detected eight years earlier by SETI, they function equally well as fiscal firewalls for space colonies. The *Sanger*'s bank accounts in California and Cuba are looking acceptable—since entering Jupiter space, the orphanage has staked a claim on roughly a hundred gigatons of random rocks and a moon that's just small enough to creep in under the International Astronomical Union's definition of a sovereign planetary body. The Borg are working hard, leading their eager teams of child stakeholders in their plans to build the industrial metastructures necessary to support mining helium three from Jupiter: they're so focused that they spend much of their time being themselves, not bothering to run Bob, the shared identity that gives them their messianic drive.

Half a light-hour away, tired Earth wakes and slumbers in time to its ancient orbital dynamics. A religious college in Cairo is considering issues of nanotechnology: if replicators are used to prepare a copy of a strip of bacon, right down to the molecular level, but without it ever being part of a pig,

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how is it to be treated? (If the mind of one of the faithful is copied into a computing machine's memory by mapping and simulating all its synapses, is the computer now a Moslem? If not, *why* not? If so, what are its rights and duties?) Riots in Borneo underline the urgency of theotechnological inquiry.

More riots in Barcelona, Madrid, Birmingham, and Marseilles also underline a rising problem: social chaos caused by cheap anti-aging treatments. The zombie exterminators, a backlash of disaffected youth against the formerly greying gerontocracy of Europe, insist that people who predate the supergrid and can't handle implants aren't *really* conscious: their ferocity is equaled only by the anger of the dynamic septuagenarians of the baby boom, their bodies partially restored to the flush of sixties youth but their minds adrift in a slower, less contingent century. The faux-young boomers feel betrayed, forced back into the labor pool but unable to cope with the implant-accelerated culture of the new millennium, their hard-earned experience rendered obsolete by deflationary time.

The Bangladeshi economic miracle is typical of the age. With growth rates running at over 20 percent, cheap out-of-control bioindustrialization has swept the nation: former rice farmers harvest plastics and milk cows for silk, while their children study mariculture and design sea walls. With cellphone ownership nearing 80 percent and literacy at 90, the once-poor country is finally breaking out of its historical infrastructure trap and beginning to develop: another generation, and they'll be richer than Japan in 2001.

Radical new economic theories are focusing around bandwidth, speed-of-light transmission time, and the implications of CETI, communication with extra-terrestrial intelligence: cosmologists and quants collaborate on bizarre relativistically telescoped financial instruments. Space (which lets you store information) and structure (which lets you process it) acquire value while dumb mass—like gold—loses it: the degenerate cores of the traditional stock markets are in free fall, the old smokestack microprocessor and biotech/nanotech industries crumbling before the onslaught of matter replicators and self-modifying ideas and the barbarian communicators, who mortgage their future for a millennium against the chance of a gift from a visiting alien intelligence. Microsoft, once the US Steel of the silicon age, quietly fades into liquidation.

An outbreak of green goo—a crude biomechanical replicator that eats everything in its path—is dealt with in the Australian outback by carpet-bombing with fuel-air explosives: the USAF subsequently reactivates two wings of refurbished B-52s and places them at the disposal of the UN-standing committee on self-replicating weapons. (CNN discovers that one of their newest pilots, re-enlisting with the body of a twenty-year-old and an empty pension account, first flew them over Laos and Cambodia.) The news overshadows the World Health Organization's announcement of the end of the HIV pandemic, after more than fifty years of bigotry, panic, and megadeath.

"Breathe steadily. Remember your regulator drill? If you spot your heart rate going up or your mouth going dry, take five."

"Shut the fuck up, 'Neko, I'm trying to concentrate." Amber fumbles with the titanium D-ring, trying to snake the strap through it. The gauntlets are getting in her way: high orbit spacesuits—little more than a body stocking designed to hold your skin under compression and help you breathe—are easy, but this deep in Jupiter's radiation belt, she has to wear an old moon suit that comes in about thirteen layers, and the gloves are stiff. It's Cher-

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nobyl weather, a sleet of alpha particles and raw protons storming through the void. "Got it." She yanks the strap tight, pulls on the D-ring, then goes to work on the next strap. Never looking down: because the wall she's tying herself to has no floor, just a cut-off two meters below, then empty space for a hundred kilometers before the nearest solid ground.

The ground sings to her moronically: "I fall to you, you fall to me, it's the law of gravity—"

She shoves her feet down onto the platform that juts from the side of the capsule like a suicide's ledge: metalized Velcro grabs hold, and she pulls on the straps to turn her body around until she can see past the capsule, sideways. The capsule masses about five tons, barely bigger than an ancient Soyuz. It's packed to overflowing with environment-sensitive stuff she'll need, and a honking great high-gain antenna. "I hope you know what you're doing?" someone says over the intercom.

"Of course I—" she stops. Alone in this TsUP-surplus iron maiden with its low bandwidth comms and bizarre plumbing, she feels claustrophobic and helpless: parts of her mind don't work. When she was four, Mom took her down a famous cave system somewhere out west: when the guide turned out the lights half a kilometer underground, she'd screamed with surprise as the darkness had reached out and touched her. Now it's not the darkness that frightens her, it's the lack of thought. For a hundred kilometers below her, there are *no* minds, and even on the surface there's not much but a moronic warbling of bots. Everything that makes the universe primate-friendly seems to be locked in the huge spaceship that looms somewhere just behind her, and she has to fight down an urge to shed her straps and swarm back up the umbilical that anchors this capsule to the *Sanger*. "I'll be fine," she forces herself to say. And even though she's unsure that it's true, she tries to make herself believe it. "It's just leaving-home nerves. I've read about it, okay?"

There's a funny, high-pitched whistle in her ears. For a moment, the sweat on the back of her neck turns icy cold, then the noise stops. She strains for a moment, and when it returns, she recognizes the sound: the heretofore-talkative cat, curled in the warmth of her pressurized luggage can, has begun to snore.

"Let's go," she says, "time to roll the wagon." A speech macro deep in the *Sanger*'s docking firmware recognizes her authority and gently lets go of the pod. A couple of cold gas thrusters pop, deep banging vibrations running through the capsule, and she's on her way.

"Amber. How's it hanging?" A familiar voice in her ears: she blinks. Fifteen hundred seconds, nearly half an hour gone.

"Robes-Pierre, chopped any aristos lately?"

"Heh!" A pause. "I can see *your* head from here."

"How's it looking?" she asks. There's a lump in her throat, she isn't sure why. Pierre is probably hooked into one of the smaller proximity cameras dotted around the outer hull of the big mothership. Watching over her as she falls.

"Pretty much like always," he says laconically. Another pause, this time longer. "This is wild, you know? Su Ang says hi, by the way."

"Su Ang, hi," she replies, resisting the urge to lean back and look up—up relative to her feet, not her vector—and see if the ship's still visible.

"Hi," Ang says shyly. "You're very brave!"

"Still can't beat you at chess." Amber frowns. Su Ang and her over-engi-

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neered algae. Oscar and his pharmaceutical factory toads. People she's known for three years, mostly ignored, and never thought about missing. "Listen, you going to come visiting?"

"Visit?" Ang sounds dubious. "When will it be ready?"

"Oh, soon enough." At four kilograms per minute of structured-matter output, the printers on the surface have already built her a bunch of stuff: a habitat dome, the guts of an algae/shrimp farm, a bucket conveyor to bury it with, an airlock. It's all lying around waiting for her to put it together and move into her new home. "Once the Borg get back from Amalthea."

"Hey! You mean they're moving? How did you figure that?"

"Go talk to them," Amber says. Actually, she's a large part of the reason the *Sanger* is about to crank its orbit up and out toward the other moon: she wants to be alone in comms silence for a couple of million seconds. The Franklin collective is doing her a big favor.

"Ahead of the curve, as usual," Pierre cuts in, with something that sounds like admiration to her uncertain ears.

"You too," she says, a little too fast. "Come visit when I've got the life-support cycle stabilized."

"I'll do that," he replies. A red glow suffuses the flank of the capsule next to her head, and she looks up in time to see the glaring blue laser-line of the *Sanger*'s drive torch powering up.

Eighteen million seconds, almost a tenth of a Jupiter year, passes.

The imam tugs thoughtfully on his beard as he stares at the traffic-control display. These days, every shift seems to bring a new crewed spaceship into Jupiter system: space is getting positively crowded. When he arrived, there were less than two hundred people here: now there's the population of a small city, and many of them live at the heart of the approach map centered on his display. He breathes deeply—trying to ignore the omnipresent odor of old socks—and studies the map. "Computer, what about my slot?" he asks.

"Your slot: cleared to commence final approach in six nine five seconds. Speed limit is ten meters per second inside ten kilometers, drop to two meters per second inside one kilometer. Uploading map of forbidden thrust vectors now." Chunks of the approach map turn red, gridded off to prevent his exhaust stream damaging other craft in the area.

Sadeq sighs. "We'll go in on Kurs. I assume their Kurs guidance is active?"

"Kurs docking target support available to shell level three."

"Praise the Prophet, peace be unto him." He pokes around through the guidance subsystem's menus, setting up the software emulation of the obsolete (but highly reliable) Soyuz docking system. At last, he can leave the ship to look after itself for a bit. He glances around: for two years he has lived in this canister, and soon he will step outside it. It hardly seems real.

The radio, usually silent, crackles with unexpected life. "Bravo One One, this is Imperial Traffic Control. Verbal contact required, over."

Sadeq twitches with surprise. The voice sounds inhuman, paced with the cadences of a speech synthesizer, like so many of Her Majesty's subjects. "Bravo One One to Traffic Control, I'm listening, over."

"Bravo One One, we have assigned you a landing slot on tunnel four, airlock delta. Kurs active, ensure your guidance is set to seven four zero and slaved to our control."

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He leans over the screen and rapidly checks the docking system's settings. "Control, all in order."

"Bravo One One, stand by."

The next hour passes slowly as the traffic control system guides his Type 921 down to a rocky rendezvous. Orange dust streaks his one optical-glass porthole: a kilometer before touch-down, Sadeq busies himself closing protective covers, locking down anything that might fall around on contact. Finally, he unrolls his mat against the floor in front of the console and floats above it for ten minutes, eyes closed in prayer. It's not the landing that worries him, but what comes next.

Her Majesty's domain stretches out before the battered Almaz module like a rust-stained snowflake half-a-kilometer in diameter. Its core is buried in a loose snowball of greyish rubble, and it waves languid brittlestar arms at the gibbous orange horizon of Jupiter. Fine hairs, fractally branching down to the molecular level, split off the main collector arms at regular intervals; a cluster of habitat pods like seedless grapes cling to the roots of the massive cluster. Already, he can see the huge steel generator loops that climb from either pole of the snowflake, wreathed in sparking plasma: the Jovian rings form a rainbow of darkness rising behind them.

Finally, the battered space station is on final approach. Sadeq watches the Kurs simulation output carefully, piping it direct into his visual field: there's an external camera view of the rockpile and grapes, expanding toward the convex ceiling of the ship, and he licks his lips, ready to hit the manual override and go around again—but the rate of descent is slowing, and by the time he's close enough to see the scratches on the shiny metal docking cone ahead of the ship, it's measured in centimeters per second. There's a gentle bump, then a shudder, then a rippling bang as the docking ring latches fire—and he's down.

Sadeq breathes deeply again, then tries to stand. There's gravity here, but not much: walking is impossible. He's about to head for the life-support panel when he freezes, hearing a noise from the far end of the docking node. Turning, he is just in time to see the hatch opening toward him, a puff of vapor condensing, and then—

Her Imperial Majesty is sitting in the throne room, moodily fidgeting with the new signet ring her Equerry has designed for her. It's a lump of structured carbon massing almost fifty grams, set in a plain band of iridium. It glitters with the blue and violet speckle highlights of its internal lasers, because, in addition to being a piece of state jewelry, it is also an optical router, part of the industrial control infrastructure she's building out here on the edge of the solar system. Her Majesty wears plain black combat pants and sweatshirt, woven from the finest spider silk and spun glass, but her feet are bare: her taste in fashion is best described as youthful, and, in any event, certain styles—skirts, for example—are simply impractical in microgravity. But, being a monarch, she's wearing a crown. And there's a cat sleeping on the back of her throne.

The lady-in-waiting (and sometime hydroponic engineer) ushers Sadeq to the doorway, then floats back. "If you need anything, please say," she says shyly, then ducks and rolls away. Sadeq approaches the throne, orients himself on the floor—a simple slab of black composite, save for the throne growing from its center like an exotic flower—and waits to be noticed.

"Doctor Khurasani, I presume." She smiles at him, neither the innocent

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grin of a child nor the knowing smirk of an adult: merely a warm greeting. "Welcome to my kingdom. Please feel free to make use of any necessary support services here, and I wish you a very pleasant stay."

Sadeq holds his expression still. The queen is young—her face still retains the puppy fat of childhood, emphasized by microgravity moon-face—but it would be a bad mistake to consider her immature. "I am grateful for Your Majesty's forbearance," he murmurs, formulaic. Behind her the walls glitter like diamonds, a glowing kaleidoscope vision. Her crown, more like a compact helm that covers the top and rear of her head, also glitters and throws off diffraction rainbows: but most of its emissions are in the near ultraviolet, invisible except in the faint glowing nimbus it creates around her head. Like a halo.

"Have a seat," she offers, gesturing: a ballooning free-fall cradle squirts down and expands from the ceiling, angled toward her, open and waiting. "You must be tired: working a ship all by yourself is exhausting." She frowns ruefully, as if remembering. "And two years is nearly unprecedented."

"Your Majesty is too kind." Sadeq wraps the cradle arms around himself and faces her. "Your labors have been fruitful, I trust."

She shrugs. "I sell the biggest commodity in short supply on any frontier. . . ." a momentary grin. "This isn't the wild west, is it?"

"Justice cannot be sold," Sadeq says stiffly. Then, a moment later: "My apologies, please accept that while I mean no insult. I merely mean that while you say your goal is to provide the rule of Law, what you *sell* is and must be something different. Justice without God, sold to the highest bidder, is not justice."

The queen nods. "Leaving aside the mention of God, I agree: I can't sell it. But I can sell participation in a just system. And this new frontier really is a lot smaller than anyone expected, isn't it? Our bodies may take months to travel between worlds, but our disputes and arguments take seconds or minutes. As long as everybody agrees to abide by my arbitration, physical enforcement can wait until they're close enough to touch. And everybody *does* agree that my legal framework is easier to comply with, better adjusted to space, than any earthbound one." A note of steel creeps into her voice, challenging: her halo brightens, tickling a reactive glow from the walls of the throne room.

Five billion inputs or more, Sadeq marvels: the crown is an engineering marvel, even though most of its mass is buried in the walls and floor of this huge construct. "There is law revealed by the Prophet, peace be unto him, and there is Law that we can establish by analyzing his intentions. There are other forms of law by which humans live, and various interpretations of the law of God even among those who study his works. How, in the absence of the word of the Prophet, can you provide a moral compass?"

"Hmm." She taps her fingers on the arm of her throne, and Sadeq's heart freezes. He's heard the stories from the claim-jumpers and boardroom bandits, from the greenmail experts with their roots in the earthbound jurisdictions that have made such a hash of arbitration here: how she can experience a year in a minute, rip your memories out through your cortical implants and make you relive your worst mistakes in her nightmarishly powerful simulation system. She is the *queen*—the first individual to get her hands on so much mass and energy that she could pull ahead of the curve of binding technology, and the first to set up her own jurisdiction and rule certain experiments to be legal so that she could make use of the

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mass/energy intersection. She has *force majeure*—even the Pentagon's infowarriors respect the Ring Imperium's firewall. In fact, the body sitting in the throne opposite him probably contains only a fraction of her identity; she's by no means the first upload or partial, but she's the first-gust front of the storm of power that will arrive when the arrogant ones achieve their goal of dismantling the planets and turning dumb and uninhabited mass into brains throughout the observable reaches of the universe. And he's just questioned the rectitude of her vision.

The queen's lips twitch. Then they curl into a wide, carnivorous grin. Behind her, the cat sits up and stretches, then stares at Sadeq through narrowed eyes.

"You know, that's the first time in *weeks* that anyone has told me I'm full of shit. You haven't been talking to my mother again, have you?"

It's Sadeq's turn to shrug, uncomfortably. "I have prepared a judgment," he says slowly.

"Ah." Amber rotates the huge diamond ring around her finger, seemingly unaware. It is Amber that looks him in the eye, a trifle nervously. Although what he could possibly *do* to make her comply with any decree—

"Her motive is polluted," Sadeq says shortly.

"Does that mean what I think it does?" she asks.

Sadeq breathes deeply again. "Yes."

Her smile returns. "And is that the end of it?" she asks.

He raises a dark eyebrow. "Only if you can prove to me that you can have a conscience in the absence of divine revelation."

Her reaction catches him by surprise. "Oh, sure. That's the next part of the program. Obtaining divine revelations."

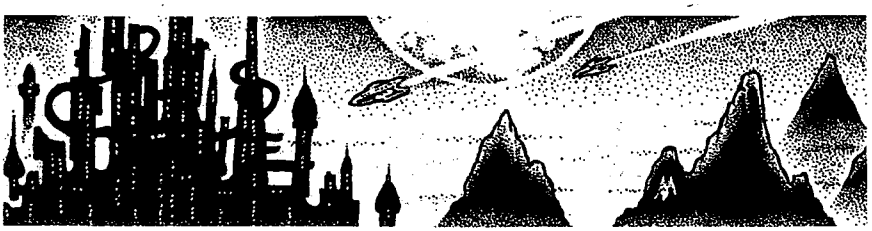
"What? From the aliens?"

The cat, claws extended, delicately picks its way down to her lap and waits to be held and stroked. It never once takes its eyes off him. "Where else?" she asks. "Doctor, I didn't get the Franklin trust to loan me the wherewithal to build this castle just in return for some legal paperwork. We've known for years that there's a whole alien packet-switching network out there and we're just getting spillover from some of their routes: it turns out there's a node not far away from here, in real space. Helium three, separate jurisdictions, heavy industrialization on Io—there is a *purpose* to all this activity."

Sadeq licks his suddenly dry lips. "You're going to narrowcast a reply?"

"No, much better than that: we're going to *visit* them. Cut the delay cycle down to realtime. We came here to build a ship and recruit a crew, even if we have to cannibalize the whole of Jupiter system to pay for the exercise."

The cat yawns, then fixes him with a thousand-yard stare. "This stupid girl wants to bring her *conscience* along to a meeting with something so smart it might as well be a god," it says, "and you're it. There's a slot open for the post of ship's theologian. I don't suppose I can convince you to turn the offer down?" ○



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WHY GO?

Out there where the solar winds
blow against the big ships coursing the skies
you will see your own displacement
as no more
than an urge of matter
bending you toward a place
you will never see.

The light sails trail a slow vacuum wake
through the surf of charged particles
foaming up on the magnetic shores
shrouding the iron core planets
in a drapery of field forces.

But planets fade behind you
to pinpricks of light
that extinguish themselves over time.
You turn your eyes to the dark expanse
fanning out ahead of you.

Your unseen goal,
an unknown and unknowable world,
becomes your reason for living.
That first boot print
applied in the distant future
by one of your descendants
is the explorer's grail you've sought
since you first traced the outline
of a constellation
with your extended fingertip.

—Mario Milosevic

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ON BOOKS

Peter Heck

PSYCHOHISTORICAL CRISIS
by Donald Kingsbury
Tor, $27.95 (hc)
ISBN: 0-312-06102-8

The title ought to alert readers to the game Kingsbury's playing here: taking the general structure and basic assumptions of Isaac Asimov's Foundation series and responding to them with a new work of fiction. Kingsbury apparently wanted to pay more direct homage to Asimov, but ran into objections from the estate. So instead, he created a similar future that is close enough to let him critique and extend the Foundation universe without direct reference to Asimov's characters and situations. The result is one of Kingsbury's most engaging books.

The dialogue between different writers' visions of the future, swapping ideas back and forth, used to be commonplace in SF, especially among writers whose careers were conducted in John W. Campbell's *Astounding* (later *Analog*); Asimov himself did it. Here, Kingsbury takes on the question of psychohistory's doctrine that its principles need to be kept secret from the masses, so the outcomes of its predictions won't be subverted by people acting to prevent them. Here, a group unhappy with being herded to a future they never asked for works to subvert the Pscholars (as Kingsbury's psychohistorians are known) by learning psychohistory on their own.

At the unwitting center of the plot is Eron Osa, a young scholar whom we meet at the moment when his fam—a sophisticated computer linked directly into the nervous system—is destroyed as punishment for crimes against Psychohistory. Kingsbury then jumps back to Eron's youth, as he acquires the souped-up fam, learns the rudiments of mathematics and history in school, apprentices to a high-level Pscholar, and embarks on the project that finally gets him in trouble. Along the way, we get a richly varied and humorous portrait of galactic society in the 148th century after the founding of the First Empire. Kingsbury shows us everything from the decadent human homeworld Rith (Earth), now reduced to the ultimate tourist trap, to the complex capital world of the galaxy, Splendid Wisdom. Pscholar Konn, Eron's mentor, is a fanatical recreator of ancient battleships, including a replica of a B-17 he builds and flies (despite his engineers' misgivings) during his stay on Rith.

In parallel with the story of Eron's education, we follow his attempts to discover what crime led to the loss of his fam (no easy job, now that he's reduced to his own animal mental resources). Kingsbury keeps the reader amused by tossing off little satirical bits and deadpan cracks about the educational system, bureaucracies, science and superstition, social hierarchies, and SF in general. Curiously, while much of his material is well outside Asimov's usual range of interests, the book as a whole is a surprisingly close fit with the Foundation universe. Asimov fans are likely to be particularly entertained by the glancing references to various episodes and charac-

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ters in the original Foundation series.

A striking tour de force, perhaps the best proof to date of the enduring impact of Asimov's vision on the work of his peers. A treat for fans of hard SF in the classic vein.

ANGELMASS
by Timothy Zahn
Tor, $27.95 (hc)
ISBN: 0-312-87828-1

Zahn's newest is probably best described as high-class space opera. FTL travel has allowed the colonization of many worlds, most of which are united in a sort of Terran empire known as the Pax Comitus. One outlying group of worlds, the Empyrean, has held out steadfastly against incorporation into the Pax. Now the Pax has plans to seize the recalcitrant colonies by force, and as part of the preparation sends a young academic named Kosta, trained as a secret agent, to infiltrate the Empyrean.

The Empyrean's politics are shaped by "angels"—mysterious particles emitted by a nearby black hole, which have the surprising property of enforcing ethical conduct by those in their proximity. Every elected official in the Empyrean wears an angel, as a way of ensuring honest government. The Pax suspects that the angels are alien artifacts intended to subvert the Empyrean for ultimate invasion; Kosta's job is to determine whether the evidence substantiates that theory.

The other main focus of the plot is Chandris, a young woman best described as a con artist. On the run not only from the law but from a former mentor who has turned against her, Chandris convinces an eccentric older couple to take her under their wing. Shortly after she discovers that they are angel hunters, she hooks up with Kosta, who has begun to develop strong suspicions as to the actual nature of the angels and the reason for their influence over human behavior. Meanwhile, we are introduced to Forsythe, a High Senator of the Empyrean, who has reservations of his own about the role the angels are playing in the political sphere. And shortly after that, the Pax's invasion force arrives, precipitating the main plot crisis.

Zahn does a good job of setting up a group of interesting, engaging characters and throwing them into a crisis that they must escape by their own wits and initiative. And while Chandris, for example, is strongly reminiscent of quasi-outlaw characters elsewhere in popular fiction, her portrayal is sharp enough and convincing enough that she doesn't come across as just another in the list. Likewise, the ultimate explanation for the angels' power over humans who remain in their vicinity is sufficiently based in the real physics of black holes that it seems logical, rather than a last-second deus ex machina.

Zahn has built a strong following with his "Black Company" series and with his Star Wars tie-ins. This very solid, very readable SF novel delivers the essential kick of the best work in the genre, and it would be encouraging if that larger audience picked this book up as well. It certainly delivers all the qualities of the best SF adventure writing. Recommended.

KUSHIEL'S CHOSEN
by Jacqueline Carey
Tor, $27.95 (hc)
ISBN: 0-312-87239-9

This is the second in Carey's fantasy series set in a world in which a polytheistic religion takes the place of Christianity in a society strongly reminiscent of Europe in the late middle ages. The protagonist is again Phedre nø Delaunay, a young woman trained as a prostitute and a spy in a society with far fewer sexual

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taboos than our own. In the previous volume, Phedre was instrumental in the preservation of Terre D'Ange (the equivalent of France) from the conspiracies of Melisande Shahrizai, who escaped to exile in the city of La Serenissima (Venice). When Phedre learns that Melisande continues to spin her plots, she goes in search of her—and finds a new series of adventures.

As in the first book in this series, Phedre's journey takes her through a series of exotic milieus, beginning with the noble circles of Elua, the capital city of Terre D'Ange. La Serenissima is convincingly decadent and machiavellian, dominated by a hereditary oligarchy and by the worship of Venus. Phedre's next stop, as the captive of a group of pirates based in what is in our world the Balkan region, takes her to a more primitive society, though not as barbaric as some of those in the first book of the series. And eventually her travels bring her to Crete, where another ancient pagan religion retains its power, and where she undergoes a cleansing mystical vision before the plot circles back on a return journey through La Serenissima to Elua.

Carey is mining a vein very similar to that of Guy Gavriel Kay's most recent work, where the fantastic element grows out of an alternate history in which Christianity either did not come into being, or lost out to one of the other contenders for religious dominance in the late classical era. The emphasis, then, isn't on magic or on fantastic creatures, but on cultures similar to those of our past but based on premises different enough to allow the unexpected. (And of course, like all religions, these have their legends and miracles to offer, which the reader can interpret literally or figuratively according to taste.) Best of all, Carey's acute eye makes her courtesan/spy a convincing and ultimately much more likeable character than any bare-bones description might suggest.

The conflict here is somewhat lower-key than in the first book in the series, although there are plenty of pitched battles, abductions, rescues, and other adventures to keep the reader turning pages. The spotlight is on Phedre, and on her canny observations of people and societies. And while she has grown up some in the interval between books, she is still far from jaded by her experience of the world around her. Very enjoyable fare if you're in the mood for a big, plot-heavy fantasy.

THE HOUSE IN THE HIGH WOOD
by Jeffrey E. Barlough
Ace, $14.95 (tp)
ISBN: 0-441-00841-0

Barlough's debut novel, *Dark Sleeper,* introduced the alternate world of an America in which various Ice Age creatures still survive, and where some cataclysmic event has apparently destroyed European civilization after the colonization of the New World took root. This time, the story takes place in Shilston Upcot, a hill-country town where the local squire, Mark Trench, is entertaining Oliver Langley, a writer with whom he became friends in college.

The big news in Shilston Upcot is the arrival of a new family in Skylingden, the old mansion that sits on the hills above the town. As in most small towns, the newcomers are inevitably the focus of everyone's attention, especially the inquisitive village lawyer, Thomas Dogger. Along with the vicar, the doctor, the innkeeper, and various other eccentric local notables, he speculates on the slim evidence concerning Bede Wintermarch and his family, the new tenants of Skylingden. But lacking any hard evidence, they arrive at no solid conclusions.

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Meanwhile, in between translating the epigrams of a forgotten Latin poet and walking about the countryside with his host, Oliver Langley slowly begins to learn some of the history of Shilston Upcot and the surrounding area. There is some dark story associated with the former tenants of Skylingden, although the exact details remain unclear. There are reports of an enormous owl that seems to make its home in the huge manse, and rumors that the disappearance of a young girl a generation ago was somehow connected with the house.

As before, much of the interest here is in the fascinating cast of characters—almost Dickensian in their eccentricity and variety—that Barlough has turned loose in his little town. That is all to the good, because the external events of the plot build rather slowly, with more suspense than action for much of the length of the book.

When the squire and the poet discover the deep secret that lurks behind the sinister history of Skylingden, the plot goes into high gear, with a frantic pursuit through the village and surrounding countryside, leading to a quiet if unsettling conclusion that, looking back, seems all but inevitable from the book's basic premises.

Barlough's previous book was compared to Lovecraft in its use of the tropes of the local color story to create a sense of supernatural horror lurking behind the surface of everyday reality. Here, the local color is every bit as strong, and the use of a new setting within the same alternate history adds to the sense of building a world. It will be interesting to see what further details of this curious blend of prehistoric fauna and Victorian culture are yet to be revealed. A very interesting new voice, well worth checking out if you missed his first book.

J.
by William Sanders
iPublish (Warner), $14.95 (pod)
ISBN: 0-795-50012-3

Sanders's latest is a variation on the alternate worlds theme he has handled with considerable flair before. Here, three women move between three parallel worlds, trying to salvage something from the catastrophes that have befallen each of them.

The first we meet is Dr. Ann Lucas, a mental patient put on an experimental drug that her doctor hopes will counteract her dreams of indescribable violence. In a parallel reality where civilization has all but collapsed after a nuclear war started by Nixon, a half-feral woman named Mad Jack is living out the violence that fills Ann's nightmares. In a shootout following her ambush of a group of men bent on raping her, Mad Jack is caught in an explosion and thrown into Ann's world—where Ann, having taken an overdose of the new drug, is fighting off an attempted rape by a brutal orderly.

The two join forces, and in another jump between planes of reality, find themselves back in Jack's world, where Ann begins to learn to shoot and defend herself—and where, after falling in love, the two realize that they are the same person, shaped by the different circumstances of their environments. Then a gang of outlaws raids the town, led by a pair of men in high-tech armor who make it clear that they have come to capture the two women. In a running gunfight Ann and Jack escape and are thrown into another parallel world. . . .

In which a burned out SF writer, Jay, has gone to a friend's home in rural Arizona to dry out and work on a new book. The "cure" lasts until she opens a suitcase and pulls out her supply of liquor. Then, Jack and Ann land on her doorstep, and Jay becomes a third in their gang—just as

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the two strangers in armor suits show up again. Sanders keeps the plot momentum moving, while at the same time making the story an interesting exploration of the nature/nurture argument. A solid performance, with plenty of flashes of the biting wit and outrageous twists on our own history that have been Sanders's trademarks ever since his hilarious debut SF novel, *Journey to Fusang*.

The book is available in a number of electronic formats in addition to the print on demand version (essentially a trade paperback), which may be hard-to-impossible to find in bookstores. This POD and electronic publishing look as if they may become the norm for books unlikely to be bestsellers, although it's surprising to see a new title from someone of Sanders's stature coming out in this format. Let's hope the difficulty of finding copies doesn't deter readers from checking this one out; the stuff between the covers is first-rate.

THE AGE OF SCIENCE
by Gerard Piel
Basic Books, $40.00 (hc)
ISBN: 0-465-05775-1

A former publisher of *Scientific American* takes a look at the century just past, summarizing its contributions to our understanding of the natural world. A brief introduction describes how *Scientific American,* one of the oldest American magazines still being published, was revived after World War II as a science magazine for the general reader.

The twentieth century may represent the pinnacle of scientific innovation, thanks in no small measure to the development of instruments and methods that allowed scientists to explore the world in previously unimaginable detail. While the telescope and microscope have been around for centuries, it was only recently that scientists became able to study very small or very distant objects in frequencies beyond the visible spectrum. X-rays, discovered by William Roentgen in 1895, made possible not only modern medicine but the ability to analyze phenomena ranging from the fine structure of molecules to the energy output of distant galaxies. As the power and scope of those instruments has increased, the universe has become both clearer and stranger.

In the twentieth century, relativity and quantum theory brought elements of the paradoxical into the seemingly hard surface of reality. The astronomers' investigation of deep space, in wavelengths invisible to the eye, revealed vast energies at play and huge vistas of time. And the light shed by the new physics on the processes of chemistry gave birth to molecular biology, above all the discovery of the DNA molecule's role in the nature of life on our planet, and the ability to manipulate genetic material at a previously unknown level.

Piel reminds us that, to most scientists, the relevance of a discovery or theory to the world at large is a non-issue. The act of understanding and explaining how the universe works ought to be justification enough. Most of us have wondered how the universe began, how life originated, and how it will all end. From the beginning, science has offered answers. The hard part has been to derive those answers from strict scientific principles: the necessity of observation, the rejection of the metaphysical, and the need for verification of results by independent observers.

True to the mission he mapped out for his magazine, Piel is always aware of the general reader's needs, and takes care to outline basic principles as well as the broader implications of the discoveries he describes. Any reader who wants a clear and up-to-date summary of those discoveries will find this book among the most useful around. ○

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SF Conventional Calendar

The biggest convention weekend of the year is coming up, over Memorial Day. Plan now for social weekends with your favorite SF authors, editors, artists, and fellow fans. For an explanation of con(vention)s, a sample of SF folksongs, info on fanzines and clubs, and how to get a later, longer list of cons, send me an SASE (self-addressed, stamped #10 [business] envelope) at 10 Hill #22-L, Newark NJ 07102. The hot line is (973) 242-5999. If a machine answers (with a list of the week's cons), leave a message and I'll call back on my nickel. When writing cons, send an SASE. For free listings, tell me of your con 6 months out. Look for me at cons behind the Filthy Pierre badge, playing a musical keyboard.—Erwin S. Strauss

MAY 2002

3–5—**DemiCon,** For info, write: **Box 7572, Des Moines IA 50322.** Or phone: **(515) 830-1305** (10 AM to 10 PM, not collect). **(E-mail) info@dmsfs.org. (Web) www.demicon.org.** Con will be held in: Des Moines IA (if city omitted, same as in address) at the Univ. Park Holiday Inn. Guests will include: F. Paul Wilson, A. Clark.

3–5—**Book Expo America, (800) 840-5613.** Javits Center, New York NY. For the book trade only.

3–5—**Star Wars Celebration, (866) 334-4334.** Convention Center, Indianapolis IN. Commercial event.

3–5—**Malice Domestic, www.users.erols.com/malice.** Marriott Crystal Gateway, Arlington VA. Mystery fiction.

3–5—**Starfury Buffy Con, www.members.aol.com/fabevent/menu2.** Heathrow Park Hotel, London England.

10–12—**FedCon, (+0821) 219-0932. www.fedcon.de.** Maritim, Bonn Germany. R. Arnold, Marc Lee. Star Trek.

17–19—**LepreCon, Box 26665, Tempe AZ 85285. (480) 945-6890.** Embassy Suites North, Phoenix AZ. P. David.

17–19—**RocKon, Box 13118, Maumelle AR 72113. www.rockon.org.** Little Rock AR. Roberson, D. L. Anderson.

17–19—**KeyCon, Box 3178, Winnipeg MB R3C 4E6. www.keycon2002.tripod.com.** Radisson. P. Abrams, de Lint.

17–19—**Starfleet Conference, 528 Ottawa, Leavenworth KS 66048. summit@region12.org.** Joplin MO. Star Trek.

17–19—**Sci Fi Expo & Toy Show, Box 94111, Plano TX 75094. (972) 578-0213.** Plano Center, Plano (Dallas) TX.

23–27—**ISDC, c/o 600 PA Ave. SE #201, Washington DC 20003. www.isdc.org.** Denver CO. Space development.

24–26—**MarCon, Box 141414, Columbus OH 43214.** Hyatt. David M. Weber, E. Roddenberry Jr.

24–26—**ConQuest, Box 36212, Kansas City MO 64171. (816) 483-1545.** Airport Hilton. Willis, P. Hayden, Freas.

24–26—**Oasis, Box 940992, Maitland FL 32794. (407) 263-5822.** Radisson, Orlando FL. Bova, Jack Haldeman.

24–26—**ConDuit, Box 11745, Salt Lake City UT 84147. (801) 294-9297.** www.conduit.sfcon.org. Wyndham Hotel.

24–26—**Anime North, Box 24090, Toronto ON M6H 4H6. www.animenorth.com.** Regal Constellation. Ladd, Dunn.

24–26—**Animazement, Box 1383, Cary NC 27512. www.animazement.org.** Sheraton, Durham NC. Anime.

24–26—**MisCon, Box 7721, Missoula MT 59807. enigma@bigsky.net.** Doubletree. Don Pedro Colley.

24–26—**VulKon, Box 297122, Pembroke Pines FL 33029. (954) 441-8735.** Atlanta GA. Barry Morse. Star Trek.

24–27—**BaltiCon, Box 686, Baltimore MD 21203. (410) 563-2737.** Wyndham. The Foglios, M. Rogers, Y. Kondo.

24–27—**WisCon, Box 1624, Madison WI 53701. (608) 233-8850.** Concourse. Hopkinson, Hoffman. Feminist SF.

24–27—**BayCon, Box 610427, San Jose CA 95161. www.baycon.org.** Doubletree. T. Mather, C. McGuire, Siladi.

24–27—**MediaWestCon, 200 E. Thomas, Lansing MI 48906. mdiawstcon@aol.com.** Holiday Inn S., Lansing MI.

31–June 2—**Project A-Kon, 3353 Broadway Blvd. #470, Garland TX 75043. www.a-kon.com.** DFW Hyatt. Anime.

31–June 2—**JaCon, Box 780555, Orlando FL 32878. twinkle6@prodigy.net.** Student Union, U. Cen. FL.Anime.

31–June 3—**New Zealand Nat'l. Con, Box 11559, Manners St., Wellington, NZ. con-with-the-wind.sf.org.nz.**

JUNE 2002

1–3—**Nocturnal: Inferno, Box 378, Hayes UB3 2WA, UK. (+44 020) 8581-0478.** Sacha's, Manchester UK. Horror.

7–9—**DucKon, Box 4843, Wheaton IL 60189. www.duckon.org.** Hyatt, Schaumburg (Chicago) IL. Joan Vinge.

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NEXT ISSUE

JULY COVER STORY

Most time-travelers try to be discreet, not even stepping on butterflies if they can help it, hoping to avoid paradoxes by changing history as little as they can—but nothing could be further from the truth in the case of the band of comrades in "Veritas," the fast-paced, and flamboyant novella by **Robert Reed** that's our cover story for July. Instead, the time-travelers go back to ancient times loaded for bear and spoiling to kick a little ass—and, in the process, carve out new empires for themselves, and gain infinite riches, no matter what damage they do to the fabric of the timestream in the process. However, then as now, plans seldom work out *quite* the way they're supposed to. This one is surprising, inventive, and hugely entertaining; we think you'll enjoy it.

OTHER TOP-FLIGHT WRITERS

Popular British writer **Paul McAuley** takes us to an Outer Solar System caught in the political and personal aftermath of the high-tech Quiet War to experience the intricate pavane of intrigue, passion, and betrayal that leads to "The Assassination of Faustino Malarte"; **Pat Cadigan**, two-time winner of the prestigious Arthur C. Clarke Award, returns after too long an absence to paint a scary and unforgettable portrait of "Linda"; new writer **Michael Jasper** makes his *Asimov's* debut with a close examination of the "Natural Order" of things (which turns out to be a *lot* more peculiar than you'd expect!); **Molly Gloss**, winner of the James Tiptree Jr. Award for her novel *Wild Life*, returns to these pages after more than a decade with a compassionate look at some of the unexpected things that can go on during "Lambing Season"; new British writer **Karen Traviss** makes her *Asimov's* debut (and her first sale) by taking us to a planet shared by aliens and humans where sin, corruption, and perhaps redemption are served up "A Slice at a Time"; and new writer **Lori Ann White** makes her own *Asimov's* debut with a funny but unsettling glimpse at what it may mean to all of us in the not-too-distant future to be a "Target Audience."

EXCITING FEATURES

Robert Silverberg's "Reflections" column gives us some advice on "How To Write"; plus an array of cartoons, poems, and other features. Look for our July issue on sale at your newsstand on June 4, 2002; or subscribe today (you can subscribe online, or order *Asimov's* in downloadable electronic formats, at our website, **www.asimovs.com**)! And don't forget that a gift subscription to *Asimov's* makes a **great** present **any** time of the year, not just at Christmas! Get some for your friends, buy them for your school or your local library, give one to that Special Someone you're trying to impress, or buy some subscriptions for your parents, grandparents, children, siblings, uncles, and/or aunts.

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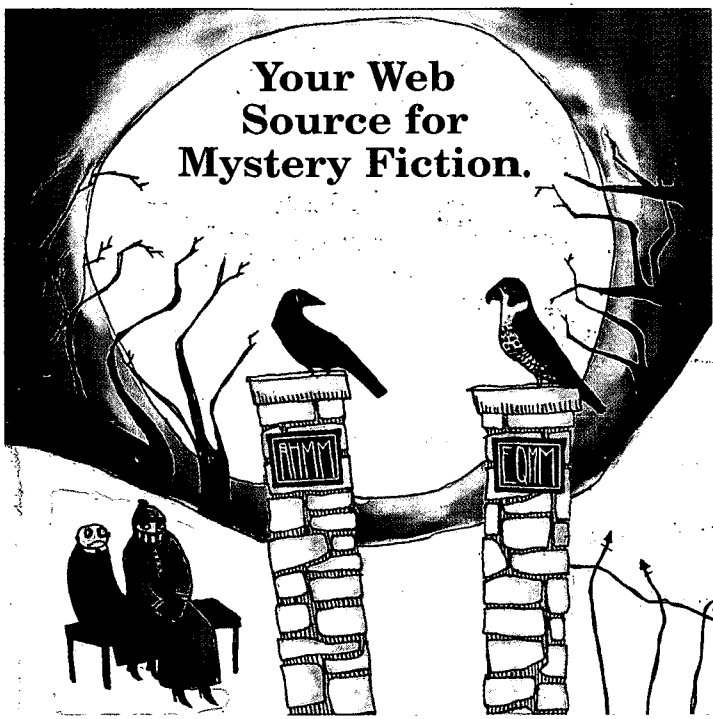

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